STATE OF INDIANA

DEPARTMENT OF LOCAL GOVERNMENT FINANCE

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REFERENCE MATERIALS FOR VALUING AGRICULTURAL LAND FOR MARCH 1, 2013

BASE RATE - $1,760

Index

General Notes for the Agricultural Land Market Value in Use for March 1, 2013 Rate of $1,760

December, 2012

History:

In compliance with the Town of St. John v. State Board of Tax Commissioners court case, the 2002 Real Property Assessment Guidelines contained a section on valuing agricultural land based on its value in use. A summary of our calculations can be found in Chapter 2, Page 100 of those guidelines, in Table 2-18. For the 2002 reassessment, the base rate for agricultural land calculated to be $1,050 and remained unchanged for 2003 and 2004. Pursuant to 50 IAC 21-6-1(a), the department issued the annual rate for March 1, 2005 to be $880. In the 2005 legislative session, SEA 327 was passed. This bill contained a non-code provision that set the base rate for agricultural land for both March 1, 2005 and March 1, 2006 at $880. SEA 327 also contained language for March 1, 2007 which instructed the Department of Local Government Finance to adjust our methodology from a four year rolling average to a six year rolling average (IC 6-1.1-4-4.5). The base rate for March 1, 2007 was calculated to be $1,140 per acre. The base rate for March 1, 2008 was updated by removing 1999 data and adding 2005 data to the six year average which resulted in a base rate of $1,200. The base rate for March 1, 2009 was updated by removing 2000 data and adding 2006 data to the six year average which resulted in a base rate of $1,250. The base rate for March 1, 2010 was updated by removing 2001 data and adding 2007 data to the six year average which resulted in a base rate of $1,400; however in March of 2010, Senate Enrolled Act 396-2010 was signed into law which required the highest year of the six-year average to be excluded in the calculation. This change in the calculation lowered the base rate for March 1, 2010 from $1,400 to $1,290 when the 2007 data was excluded. The base rate for March 1, 2011 was updated by removing the 2002 data, adding the 2008 data, and excluding the highest year (2008) of the six-year average to arrive at a base rate of $1,500. The base rate for March 1, 2012 was updated by removing the 2003 data, adding the 2009 data, and excluding the highest year (2008) of the six-year average to arrive at a base rate of $1,630. The base rate for March 1, 2013 was updated by removing the 2004 data, adding the 2010 data, and excluding the highest year (2010) of the six-year average to arrive at a base rate of $1,760.

Table 2-18 – Years:
For March 1, 2013, the six years of data used in the calculations were: 2005, 2006, 2007, 2008, 2009, and 2010.

Table 2-18 – Net Income from Cash Rents:
Since agricultural land in Indiana is almost evenly divided between cash rent and owner-occupied production, our agency used an average of both types of income in our calculation.

The data for cash rents came from three Purdue Agricultural Economics Reports (PAER). For the 2005 & 2006 rents, go to Table 2 of Page 3 of the August of 2006 report. For the 2007 & 2008 rents, go to Table 2 of Page 3 of the August of 2008 report. For the 2009 & 2010 rents, go to Table 2 of Page 3 of the August of 2010 report. From these tables, we used the statewide averages for average soil.

There is also an adjustment to these amounts to reduce the rents for property taxes paid on the land. This adjustment was based on a study conducted by the Department of Local Government Finance.

Table 2-18 – Net Income from Operating:
This income represents the profits from the owner-occupied production of crops on agricultural land.

The foundation for the calculations that our agency adopted comes from Table 1 of the June 24, 1999 Doster/Huie report.

Doster/Huie Report – Table 1-Years:
This report used the years of 1996, 1997, 1998, & 1999. The year of 1999 was removed from our 2002 calculations since our calculations were based on January 1, 1999. Information for 1995 was obtained and added to our calculations. (Also note the date of June 24, 1999 for the report which means that six months of data had been estimated.)

Doster/Huie Report – Table 1-Yields:
The yields in this report were obtained from the Indiana Agricultural Statistics Service (IASS) for both corn and soybeans. The IASS publishes these statistics on an annual basis. Yield information for these four years can be found in the 1999-2000 publication for corn on page 31 in the Final Yield per Acre column of the Crop Summary section and on page 32 for soybeans.

Doster/Huie Report – Table 1-Prices:
The prices used in this report were for the month of November. They can found in IASS publications for that time period. Note: Our agency made an adjustment to this part of the calculation because the majority of the grain harvested in Indiana is not sold in November but throughout the year. This adjustment will be discussed later.

Doster/Huie Report – Table 1-Sales:
Yields for each type of crop (corn/soybeans) multiplied by the Price per Bushel for each type of crop equals Sales.

Doster/Huie Report – Table 1-Less Variable Costs:
This information can be found in the Purdue Crop Guide. This guide is an annual publication (ID-166). The dollar amount for each crop type can be found in section titled "Estimated XXXX (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the line for "Total direct cost per acre at harvest". The costs include labor, seed, fertilizer, chemicals, machinery repairs, and fuel.

Doster/Huie Report – Table 1-Crop Contribution Margin:
Sales less Variable Costs equal Crop Contribution Margin for each type of crop (corn/soybeans).

Doster/Huie Report – Table 1-Plus Government Payment:
The publication adds government payments as a source of additional revenue for the land. This amount for each year was estimated by the authors of the publication.

Doster/Huie Report – Table 1-Total Contribution Margin:
This number represents the average of the Crop Contribution Margin for corn and soybeans plus one-half (1/2) of the amount for the government payment. (The sum of the three numbers divided by two.)

Doster/Huie Report – Table 1-Less Overhead:
The overhead expense for machinery, drying/handling, & family/hired labor can be found on the Purdue Crop Guide (ID-166). The dollar amount for each crop type can be found in section titled "Estimated 20___ (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the lines for "Indirect charges per acre".

Doster/Huie Report – Table 1-Real Estate Tax:
A deduction of $10 for real estate taxes was estimated by the authors.

Doster/Huie Report – Table 1-Income:
Total Contribution Margin less the Overhead Expenses of machinery, drying/handling, labor, & real estate taxes equals Income.

Doster/Huie Report – Table 1-Estimated Land Value:
The authors of the paper then averaged the four years (1996 – 1999) income and divided it by a 1999 interest rate to arrive at an Estimated Land Value of $971.

Table 2-18 – Net Income from Operating:
This income represents the profits from the owner-occupied production of crops on agricultural land. While the foundation for the calculations that our agency adopted comes from Table 1 of the June 24, 1999 Doster/Huie report, we did make some alterations to it.

<u>Adjustments Made To The Doster/Huie Report By Our Department:</u>

Years:
We added the statistics for 1995 which were available and deleted the estimates for 1999 since interest rates and income data were not available.

Price:
We added two averages to the Doster/Huie report since this report used only November prices. Since only a small portion of Indiana's grain is sold in November, the Department of Local Government Finance developed two annual averages for the calculation. The first average was the calendar year average of the grain prices which are published in the IASS book. The second average was the market year average. This average is calculated by the IASS and is a weighted average that is based on the end of the month grain price and the percentage of the total grain harvested that was sold that month.

Interest Rate:
Instead of using the 1999 St. Paul Farm Credit Bank interest rate, we chose to use the quarterly farm loan rates published by the Federal Reserve Bank of Chicago. The FRBC publishes an agricultural

newsletter on a quarterly basis called the "AgLetter". This newsletter provides interest rates on farm loans for operating loans, feeder cattle, and real estate. The Department averaged the interest rates for the operating loans and real estate categories. A study was conducted on different sources of interest rates between Purdue Agricultural Economics Reports, the St. Paul Farm Credit Bank, and the Federal Reserve Bank of Chicago. The study found that the rates varied from year to year but when averaged out over the four year period were comparable.

SUMMARY:

To understand the increase from last year's base rate of $1,630 to this year's base rate of $1,760, one simply needs to compare the 2004 data removed from the six-year average to the 2010 data entered into the calculation.

Net Cash Rents increased from $104 per acre in 2004 to $141 on 2010. While yields for corn decreased from 168 bushels in 2004 to 157 bushels in 2010 and yields for soybeans decreased from 51.5 bushels in 2004 to 48.5 bushels in 2010, the price for corn increased considerably from $2.53 in 2004 to $3.66 in 2010 (market year average) and the price for soybeans increased considerably from $7.67 in 2004 to $9.80 in 2010 (market year average). The change in November grain prices for both corn and soybeans more than doubled when removing the 2004 prices of $1.81 & $5.22 and replacing them with the 2010 prices of $4.81 & $11.50. Variable costs (seed, fertilizer, chemicals, etc.) also increased as costs to produce corn increased from $171 in 2004 to $342 in 2010 and from $106 in 2004 to $183 in 2009 for soybeans. So while there was a decrease in yields and an increase in production costs when comparing the 2004 data to the 2010 data, higher cash rents and higher grain prices eliminated the negative impact of the decreased yields and the higher production costs to make the 2010 data set, the highest of the six-year average thus eliminating it from the calculation for the March 1, 2013 assessment year.

It should also be noted that interest rates also dropped from 6.35% in 2004 to 5.97% in 2010 which would slightly increase the market value under the income approach.

Valuing Agricultural Land

The agricultural land assessment formula involves the identification of agricultural tracts using data from detailed soil maps, aerial photography, and local plat maps. Each variable in the land assessment formula is measured using appropriate devices to determine its size and effect on the parcel's assessment. Uniformity is maintained in the assessment of agricultural land through the proper use of soil maps, interpreted data, and unit values.

In order to apply the agricultural land assessment formula, you need to understand the following topics, which are discussed in the sections below:

- agricultural land base rate values
- assessment of agricultural land
- units of measurement for agricultural land
- classification of agricultural land into land use types
- use of soil maps
- calculating the soil productivity index
- valuation of strip mined agricultural land
- valuation of oil and gas interests

The rest of the chapter provides instructions for completing the "Land Data and Computations" section of the agricultural property record card.

Agricultural Land Base Rate Value

The 2002 general reassessment agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

Market value in use = Net Income ÷ Capitalization Rate

The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization

rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the State Board of Tax Commissioners utilized a four-year rolling average (1995 to 1998) of both methods in determining the market value in use of agricultural land. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18. Agricultural Land market value in use

	NET INCOMES		CAP. RATE	MARKET VALUE IN USE		
YEAR	Cash Rent	Operating		Cash Rent	Operating	Average
1995	$88	$56	9.92%	$887	$565	$ 726
1996	$94	$131	9.29%	$1012	$1410	$1,211
1997	$100	$124	9.31%	$1074	$1332	$1,203
1998	$102	$91	9.10%	$1121	$1000	$1,060
				Average Market Value in Use =		$1,050

The statewide agricultural land base rate value for the 2002 general reassessment will be the average market value in use calculated as shown above or $1,050 per acre.

Assessing Agricultural Land

The agricultural land assessment formula involves identifying agricultural tracts using data from a detailed soil map, aerial photography, and local plat maps. Each variable of the land assessment formula is measured using various devices to determine its size and effect on the parcel's assessment. The proper use of the soil maps, interpreted data, and unit values results in greater uniformity in the assessment process of agricultural lands. Some commercial and industrial zoned acreage tracts devote a portion of the parcel to an agricultural use. The assessor classifies these parcels as either commercial or industrial. However, the portion of land devoted to agricultural use should be valued using the agricultural land assessment formula. Portions not used for agricultural purposes would be valued using the commercial and industrial acreage guidelines described in this chapter.

Converting Units of Measurement for Agricultural Land

Figure 2-23 shows the units of measurement commonly used to measure agricultural land. Table 2-19 describes equivalencies for these units of measurement.

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Certification of Agricultural Land Base Rate Value for Assessment Year 2013

This memorandum hereby serves to notify assessing officials of the agricultural base rate to be used for the March 1, 2013 assessment date: **$1,760 per acre.**

Land used for agricultural purposes shall be adjusted consistent with the guideline methodology developed for the 2012 general reassessment agricultural land value except, in determining the annual base rate, the Department of Local Government Finance ("Department") shall adjust the methodology to use the lowest five years of a six (6) year rolling average. The Department will issue annually, before January 1, the base rate to be applied for the following March 1 assessment date. 50 IAC 27-6-1

Those portions of agricultural parcels that include land and buildings not used agriculturally, such as homes, homesites, and excess land and commercial or industrial land and buildings, shall be adjusted by the factor or factors developed for other similar property within the geographic stratification. The residence portion of agricultural properties will be adjusted by the factors applied to similar residential properties.
50 IAC 27-6-1

The 2013 assessment year agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

Market value in use = Net Income ÷ Capitalization Rate

The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the Department utilized a six-year rolling average (2005 to 2010), eliminating in the calculation of the rolling average the year among the six (6) years for which the highest market value in use of agricultural land is determined. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18. Agricultural Land market value in use
Source: Real Property Assessment Guidelines

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2005	110	59	7.22%	1,524	817	1,170
2006	110	74	8.18%	1,345	905	1,125
2007	122	184	7.94%	1,537	2,137	1,927
2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066
~~2010~~	~~141~~	~~172~~	~~5.97%~~	~~2,362~~	~~2,881~~	~~2,621~~
				Average Market Value in Use		**$1,760**

The statewide agricultural land base rate value for the 2013 assessment year will be $1,760 per acre.

Dated this 31st day of December, 2012.

Brian E. Bailey, Commissioner
Department of Local Government Finance

Attest:

Catherine H. Wolter, General Counsel

A Method for Assessing Indiana Cropland
An Income Approach to Value

D. Howard Doster & John M. Huie, Purdue Ag Economists
June 24, 1999

Summary

A method for taxing agricultural cropland based on the income potential of the land can be developed. The method is illustrated below. Data components of this method include detailed soil maps, estimated yields and production costs by soil type, reported average yields by county, reported average Indiana November corn and soybean prices, USDA corn and soybean loan prices by county, and the interest rate on new Farm Credit Bank loans in the St Paul district.

Using this information, a land value can be calculated for each soil type in each county in Indiana. Using detailed soil maps, county staff can then calculate income, land value, and tax due for each ownership parcel.

Using state yields, prices, and costs for 1996, 1997, 1998, and estimates for 1999, income and land values are calculated below for average and high yield soil types. As shown in Table 1, the average land value is calculated to be $971. In Table 2, the high yield land is valued at $1510.

As shown in the tables, incomes for 1996 and 1997 are much higher than incomes for 1998 and projected 1999. Though not shown, income for 1995 was much higher than projected income for 1999.

Detailed soil maps

Maps from The Natural Resource and Conservation Service (NRCS) are now available for all counties indicating the soil type of all land in the state. County staff have used this information in past years. For five counties, this soil type information has been transferred to a GIS data base. In these counties, county staff could identify land ownership units in the GIS data base and with appropriate computer software, calculate the real estate tax on cropland.

In 1998, computer software was developed by Purdue Ag Economists for calculating income for user entered ownership parcels in Tippecanoe County. This program was shown at the July, 1998 Purdue Top Farmer Crop Workshop and the September, 1998 Prairie Farmer Farm Progress Show. The purpose of these demonstrations was to show prospective landowners, prospective tenants, and professional appraisers a way to estimate income potential of an ownership parcel.

Estimated yield and production cost by soil type

Purdue agronomists and NRCS staff have estimated crop yields for each soil type in Indiana. (These yield estimates may need to be updated, and possible differences considered for the same soil type in different counties.) Purdue staff annually estimate crop production costs for low, average, and high yielding soil types. The process could be computerized and budgets could be prepared for all Indiana soils.

Reported average yield by county

The Indiana Agricultural Statistics Service reports average yield for each county in May each year for the preceding year's crops. An expected trend yield could be calculated for each soil in each county. Each year, these trend yields could be adjusted by the same percentage change as the difference between the county expected and reported average yields.

Reported average Indiana November corn and soybean prices

The Indiana Agricultural Statistics Service reports average Indiana crop prices for each month. Prices for November[1/] are used in calculating per acre corn and soybean income.

USDA corn and soybean loan price

USDA has determined corn and soybean loan prices for each Indiana county. These prices reflect crop price differences because of the location of the county. Therefore, the November state average prices for corn and soybeans could be adjusted by the price location differences in loan prices to obtain an estimate of November prices by county.

St Paul Farm Credit Bank interest rate

For each year, the Internal Revenue Service issues a listing of the average annual effective interest rates charged on new loans under the Farm Credit Bank system. These rates are used in computing the special use value of real property used as a farm for which an election is made under section 2032A of the Internal Revenue Code. Indiana is in the St Paul district. For 1999, the reported interest rate is .0821.

Weighted annual incomes and estimated land values

As shown in Table 1, the 4-year average annual income is $80 and the estimated land value is $971. As shown in Table 2, for the high yield land the average income is $124 and the land value is $1510.

Annual incomes could be weighted with income from the most recent year being weighted the most. One option would be a percentage weight of 40 - 30 - 20 - 10 with the most recent year at 40% and the most distant year at 10%. Using this criteria, the weighted average annual income is $71.10 and the estimated average land value is $866. A weighting of 33 - 27 - 22 - 18 with the most recent year at 33% and the most distant year at 18% produces a weighted average annual income of $75.27 and an estimated average land value of $917.

For high yield soil, the 40 - 30 - 20 - 10 optimal weights give an average income of $113 and a land value of $1379. The 33 - 27 - 22 - 18 weights give an average income of $118 and a land value of $1442.

This approach - discounting the potential agricultural income - to valuing farm land is reasonable so long as the income estimates and the discount rates are defensible. There is also logic to using a four year average with the most recent years being weighted higher, especially if the state were to go to annual assessments. So long as they stay with a four year assessment cycle it becomes more of a judgement call.

[1/]Prices tend to increase throughout the year. November, a month close to the end of the harvest season was chosen. If prices later than November are chosen then a storage cost would also need to be included.

Income and land value estimates

As illustrated in Tables 1 and 2, income from a corn/soybean rotation on average and high yield soils is calculated for 1996-99.

State average yields for each soil are multiplied by November prices to obtain per acre sales.

Variable costs as found in the Purdue Crop Guide for average and high yield soils are subtracted to obtain per acre contribution margin from crops.

Corn contribution margin plus soybean contribution margin plus government payment is added and the sum is divided by 2 to get per acre total contribution margin.

Overhead costs from the Purdue Crop Guide for a corn/soybean farm are subtracted from the contribution margin to get per acre income.

Incomes for the four years are averaged.

The average income is divided by the St Paul interest rate to get estimated land value.

Table 1. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
Average Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield[1/]	123	38	122	43.5	132	42	134.1	42.9
Price (November)[1/]	$2.69	$6.90	$2.60	$6.88	$2.06	$5.49	$2.04	$5.40
Sales	$331	$262	$317	$299	$282	$231	$274	$232
Less variable costs[2/]	134	94	137	96	148	85	145	86
Crops contribution margin	$197	$168	$180	$203	$134	$146	$129	$146
Plus government payment[3/]	$23		$45		$53		$34	
Total contribution margin	$194		$214		$167		$154	
Less overhead:								
Annual machinery[2/]	48		50		49		49	
Drying/handling	6		6		7		7	
Family/hired labor[2/]	37		37		37		37	
Real estate tax[3/]	10		10		10		10	
Equals:								
Income	$93		$111		$64		$51	

4-year average income = $80
1999 St Paul interest rate[4/] = .0821
Estimated land value = $971

[1/] State average yield, state average November price as reported by Indiana Agricultural Statistics Service.
[2/] Costs are taken from annual Purdue Crop Guide, ID-166.
[3/] Government payments and real estate tax are estimated by the author.
[4/] Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.

Table 2. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
High Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield[1/]	151.3	46.8	49.9	53.6	169	51	165	52.8
Price (November)[1/]	$2.69	$6.90	$2.60	$6.88	$2.06	$5.49	$2.04	$5.40
Sales	$407	$323	$390	$369	$348	$280	$337	$285
Less variable costs[2/]	153	103	157	106	170	91	167	92
Crops contribution margin	$254	$220	$233	$263	$178	$189	$170	$193
Plus government payment[3/]	$29		$56		$64		$42	
Total contribution margin	$252		$276		$216		$202	
Less overhead:								
Annual machinery[2/]	53		55		54		54	
Drying/handling	7		7		8		8	
Family/hired labor[2/]	37		37		37		37	
Real estate tax[3/]	14		14		14		14	
Equals:								
Income	$141		$163		$103		$89	

4-year average income = $124
1999 St Paul interest rate[4/] = .0821
Estimated land value = $1510

[1/] State average yield, state average November price as reported by Indiana Agricultural Statistics Service.
[2/] Costs are taken from annual Purdue Crop Guide, ID-166.
[3/] Government payments and real estate tax are estimated by the author.
[4/] Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.

Table 2-18 - Updated for March 1, 2013
Source: Real Property Assessment Guidelines

	Column A	Column B	Column C	Column D	Column E	Column F	
	NET INCOMES PER ACRE		RATE	MARKET VALUE IN USE PER ACRE		AVERAGE MARKET VALUE IN USE	
Year	Cash Rent	Owner-Operated	Cap. Rate	Cash Rent	Owner-Operated	PER ACRE	
2005	110	59	7.22%	1,524	817	1,170	(1)
2006	110	74	8.18%	1,345	905	1,125	(1)
2007	122	184	7.94%	1,537	2,317	1,927	(1)
2008	140	189	6.56%	2,134	2,881	2,508	(1)
2009	139	116	6.17%	2,253	1,880	2,066	(1)
2010	~~141~~	~~172~~	~~5.97%~~	~~2,362~~	~~2,881~~	~~2,621~~	(1)
					Base Rate (Average - 5 Lowest Years)	1,760	(2)
Formula:	Gross Cash Rent Less Property Taxes	Gross Income Less Expenses	Average of Qtly. Farm Loan Rates	Column A divided by Column C	Column B divided by Column C	The average of Columns D and E	(1)
Source:	Purdue Ag. Econ. Reports (PAER)	Indiana Ag. Statistics Service and Purdue Crop Guide	Federal Reserve Bank of Chicago			The base rate is the average of the 5 lowest averages above rounded to the nearest $10. [IC 6-1.1-4-4.5 (e) (2)]	(2)

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the the net income of each acre by the appropriate capitalization rate.

Market Value In Use = Net Income Divided By The Capitalization Rate

Table 2-18 - Updated for March 1, 2013
Calculation for Net Income-Cash Rent Column

Year	Gross Cash Rent	Less Property Taxes	Net Cash Rent	Cap. Rate	Cash Rent Value
2005	126	-16	110	7.22%	1,524
2006	127	-17	110	8.18%	1,345
2007	139	-17	122	7.94%	1,537
2008	157	-17	140	6.56%	2,134
2009	158	-19	139	6.17%	2,253
2010	161	-20	141	5.97%	2,362

PURDUE UNIVERSITY

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2006

Indiana Farmland Values Continue to Increase

Craig L. Dobbins, Professor and Kim Cook, Research Associate

Statewide Land Values

After several years of increasing values, some people wonder if farmland values may have reached their top. They point to several factors – sharp increases in energy and fertilizer prices used in crop production, continued low crop prices, the high value to cash rent multiple, and more recently, increasing long-term interest rates. Yet, the June 2006 Purdue Land Value Survey found that in most cases farmland values across the state continued to march higher. On a state-wide basis, bare Indiana cropland ranged in value from $2,509 per acre for poor land to $3,770 per acre for top land (Table 1). Average bare Indiana cropland had an estimated value of $3,162 per acre. For the 12-month period ending in June 2006, this was an increase of 6%, 7.4%, and 6%, respectively for poor, average, and top land.

Part of the difference in land values reflects productivity differences. As a measure of productivity, survey respondents provide an estimate of long-term corn yields. The average reported yield was 108, 139, and 170 bushels per acre, respectively for poor, average, and top land. The value per bushel for different land qualities was very similar, ranging from $22.14 to $23.27 per bushel. On a per bushel basis, the most expensive land is the poor land with a value of $23.27 per bushel. Top quality land was the least expensive at $22.14 per bushel.

The average value of transitional land, land moving out of agriculture, increased 11% this year. The average value of transitional land in June 2006 was $9,113 per acre. However, there is a very wide range of values for transitional land – from twice its agricultural value to more than ten times its agricultural value. These values are strongly influenced by what the land is transitioning into and its location. Due to the wide variation in estimates for transitional land, the median value* may give a more meaningful picture than the arithmetic average. The median value of transitional land in June 2006 was $7,750 per acre. In 2005, the median value for transition land was $7,000.

This year for the first time we asked survey respondents to indicate the value of rural recreational land. Rural recreational land is used for hunting and other recreational uses. On a state wide basis, the average value of rural recreational land was $3,059, almost equal to the value of average quality farmland. But as with transitional land, there is a wide range of values for rural recreational land and its value is very sensitive to the location of the tract. The median value for rural recreational land in June was $2,775 per acre.

Statewide Rents

On a state wide basis, cash rents increased $1 per acre (Table 2). The estimated cash rent was $155 per acre on top land, $127 per acre on average land, and $100 per acre on poor land. This was an increase in rental rates of 1% for poor land, 0.8% for average land, and 0.6% for top quality land. The increase from 2005 to 2006 continued the upward trend in cash rent values but it is the smallest percentage increase reported for the past six years. Statewide, rent per bushel of estimated corn yield ranged from $0.91 to $0.93 per bushel.

Cash rent as a percentage of value continued to decline. For top quality farmland, cash rent as a percentage of farmland value was 4.1%. For average and poor quality farmland, cash rent as a percentage of farmland value was 4.0%. Over the 32-year history of the survey, rent as a percentage of farmland value has

* *The median is the middle observation in data that have been arranged in ascending or descending numerical order.*

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Bare farmland values have consistently been the highest in the Central region. This year, values in West Central and Central Indiana are very similar. While the Central Indiana top and poor quality farmland values are slightly higher than those in West Central Indiana, average quality land values are slightly larger in West Central Indiana than in Central Indiana. Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the highest in the Central and West Central region, ranging from $23.41 to $25.03 per bushel. This was followed by the North and Northeast with values ranging from $21.12 to $22.69. The Southwest and Southeast had land values per bushel ranging from $18.78 to $22.29 per bushel.

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2005 and 2006, Purdue Land Value Survey, June 2006

Area	Land Class	Corn bu/A	Rent/Acre 2005 $/A	Rent/Acre 2006 $/A	Change '05-'06 %	Rent/bu. of Corn 2005 $/bu.	Rent/bu. of Corn 2006 $/bu.	Rent as % of June Land Value 2005 %	Rent as % of June Land Value 2006 %
North	Top	174	153	158	3.3%	0.88	0.91	4.1	4.2
	Average	140	125	128	2.4%	0.89	0.91	4.2	4.2
	Poor	107	97	101	4.1%	0.90	0.94	4.1	4.2
Northeast	Top	164	141	141	0.0%	0.86	0.86	4.1	4.1
	Average	135	111	114	2.7%	0.83	0.84	3.9	3.9
	Poor	105	87	89	2.3%	0.84	0.85	3.7	3.7
W. Central	Top	172	166	169	1.8%	0.99	0.98	4.5	4.2
	Average	142	140	143	2.1%	1.00	1.01	4.5	4.1
	Poor	112	112	118	5.4%	1.03	1.05	4.6	4.2
Central	Top	172	167	164	-1.8%	0.97	0.95	4.2	4.0
	Average	142	138	136	-1.4%	0.97	0.96	4.1	4.0
	Poor	112	112	110	-1.8%	0.99	0.99	4.0	3.9
Southwest	Top	173	155	158	1.9%	0.91	0.91	5.0	4.3
	Average	140	123	126	2.4%	0.89	0.90	4.9	4.3
	Poor	106	93	92	-1.1%	0.88	0.87	5.0	4.6
Southeast	Top	164	123	124	0.8%	0.77	0.75	4.2	3.9
	Average	133	99	97	-2.0%	0.74	0.73	4.0	3.6
	Poor	100	77	75	-2.6%	0.74	0.75	3.8	3.4
Indiana	Top	170	154	155	0.6%	0.91	0.91	4.3	4.1
	Average	139	126	127	0.8%	0.91	0.91	4.3	4.0
	Poor	108	99	100	1.0%	0.92	0.93	4.2	4.0

Area Cash Rents

All areas of the state except Central Indiana reported an increase in cash rent for at least some land qualities (Table 2). In Central Indiana, cash rents were reported to have declined by 1.4% to 1.8%. Across the three land qualities the strongest percentage increase was in the North region. Increases in this region were 2.4% to 4.1%.

Cash rents are the highest in the West Central region, followed by the Central region. Cash rent per bushel in West Central Indiana ranges in value from $0.98 to $1.05. In the Central region, these values ranged from $0.95 to $0.99 per bushel. The per bushel rents in these two regions are the highest in the state. The next highest per bushel rent was in the North and Southwest, ranging from $0.87 to $0.94. Per bushel rents in the Northeast ranged from $0.84 to $0.86. The lowest per bushel cash rents were $0.73 to $0.75, reported for the Southeast.

Rural Home Sites

Respondents were asked to estimate the value of rural home sites with no accessible gas line or city utilities and located on a black top or well-maintained gravel road. The median value for five-acre home sites ranged from $5,000 to $10,000 per acre (Table 3). Estimated per acre median values of the larger tracts (10 acres) ranged from $6,000 to $10,000 per acre.

Farmland Supply & Demand

To assess the supply of land on the market, respondents were asked to provide their opinion of the amount of farmland on the market now compared to a year earlier. The respondents indicated either more, the same, or less land was on the market than one year ago. Only 18.6% of the 2006 respondents indicated more land was on the market now compared to year-ago levels (Figure 2). The remaining 81.4% of the respondents indicated the amount of land on the market at the current time was the same or less than a year ago. Compared to 2004 and 2005, more respondents indicated that there was more or the same amount of land on the market.

Table 3. Median value of five-acre and ten-acre home sites

Area	Median value, $ per acre: 5 Acres or less for home site 2003 $/A	2004 $/A	2005 $/A	2006 $/A	10 Acres & over for subdivision 2003 $/A	2004 $/A	2005 $/A	2006 $/A
North	6,000	6,000	7,250	7,000	5,000	5,000	6,000	7,000
Northeast	6,000	6,000	6,500	7,000	5,000	5,000	5,000	6,000
West Central	6,000	6,000	6,000	7,500	5,000	5,000	6,000	7,500
Central	8,500	8,000	10,000	10,000	7,500	7,900	8,500	10,000
Southwest	5,000	5,000	5,000	5,000	5,000	5,000	5,250	7,000
Southeast	6,000	5,000	7,000	7,000	4,750	5,000	6,000	6,250

PURDUE UNIVERSITY

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2008

Indiana Farmland Value & Cash Rent Continue Sharp Upward Climb

Craig L. Dobbins, Professor and Kim Cook, Research Associate

State-wide Farmland Values

With the sharp increase in grain prices, it probably is no surprise that the 2008 Purdue Farmland Value and Cash Rent Survey found farmland value and cash rent moving higher. On a state-wide basis, the average value of bare Indiana cropland ranged from $3,408 per acre for poor quality land to $5,003 per acre for top quality land (Table 1). Average quality Indiana cropland had an estimated average value of $4,240 per acre. For the 12-month period ending in June 2008, this was an increase of 13.9%, 15.0%, and 13.5%, respectively for poor, average, and top quality land. These double-digit increases are less than those reported last year, but still signal a strong farmland market. Since June 2006, Indiana farmland values have increased by about one-third (32.7%, 34.1% & 35.8% for poor, average, and top quality farmland).

The value of farmland is influenced by many factors. One often cited reason for differences in the value of farmland is soil productivity. To assess the productivity of the various land qualities, survey respondents were asked to provide an estimate of the long-term corn yield for poor, average, and top quality land. These estimates are averaged to provide a measure of the productivity for each land type. For the state, the average of the reported yields was 115, 148, and 179 bushels per acre, respectively for poor, average, and top quality land. State-wide, the value per bushel of corn for different land qualities ranged from $28.00 to $29.58 per bushel. On a per bushel basis, the most expensive land is the poor quality land with a value of $29.58 per bushel. Top quality land was the least expensive at $28.00 per bushel.

The average value of transitional land, farmland moving out of agriculture, declined slightly this year. The average value of transitional land in June 2008 was $9,415 per acre. This was a decline of 1.1% when compared to the average value in 2007. Given all the news about slow growth in the general economy and difficulties in the housing industry, some softening of this market would be expected. However, the value of transitional land is strongly influenced by what the land is transitioning into and its location. In June 2008, transitional land values ranged from $2,500 to $55,000 per acre. Because of the wide variation in values of transitional land, the median value* may give a more meaningful picture than the arithmetic average. The median value of transitional land increased from $7,500 per acre in June 2007 to $8,000 in June 2008.

The state-wide average value of rural recreational land, land used for hunting and other recreational uses, is $3,952 per acre. As with

** The median is the middle observation in data that have been arranged in ascending or descending numerical order.*

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For top quality farmland, cash rent as a percentage of farmland value was 3.9%. For average and poor quality farmland, cash rent as a percentage of farmland value was 3.7% and 3.6%, respectively. These percentage values were either the same or only slightly less than those reported in 2007, indicating a possible pause in the downward trend in this percentage. Over the 34-year history of the survey, rent as a percentage of farmland value has averaged about 6.0%.

Area Land Values

Survey responses were organized into six geographic regions (Figure 1). As in the past years, there are geographic differences in land value changes. This year, the North region reported the strongest percentage increase in farmland values. Bare farmland in this area was estimated to have increased 13.5% to 20.3% (Table 1). The increase in value for the West Central, Central, and Southwest region was also strong with increases ranging from 11.9% to 16.6%. The increases in value for the Northeast and Southeast were more modest, ranging from 10% to13.5%.

The highest value per acre for top, average, and poor quality farmland is in Central Indiana. However, the dollar value of top, average and poor quality farmland is very similar in the Central, West Central and North regions. The lowest farmland values continue to be in the Southeast.

Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the highest in the North, Central and West Central regions, ranging from $28.19 to $31.40 per bushel. This is followed by the Northeast and Southwest, ranging from $25.14 to $30.16 per bushel. The Southeast had the lowest land values per bushel, ranging from $23.01 to $26.89 per bushel. The most expensive farmland per bushel of corn yield in all regions except the Southwest was poor quality land.

Area Cash Rents

There were strong increases in cash rents in all areas of the state. The strongest percentage increases were in the North, Northeast and Southeast, with increases between 13.2% and 17.2% (Table 2). There were only three percentage increases in cash rent that were not in double digits. These were for poor quality land in central Indiana at 9.0%, and average and poor quality land in Southwest Indiana at 9.0% and 5.0%, respectively.

For the first time, cash rents for top quality land in the North, West Central, and Central regions have all broken the $200 per acre mark. Another first is the highest cash rent has shifted from the West Central region to the North region. The highest cash rents are found in the North, West Central, and Central regions of the state. This is followed by cash rents in the Northeast and the Southwest. Cash rents are the lowest in the Southeast.

Differences in productivity have a strong influence on per acre rents. To adjust for productivity differences, cash rent per acre was divided by the estimated corn yield. Rent per bushel of corn yield for the North, West Central, and Central regions are similar, ranging from $1.10 to $1.17 per bushel. In the Northeast and Southwest regions, cash rent per bushel ranged from $0.97 to $1.08. Per bushel cash rent in the Southeast ranged from $0.86 to $0.90 per bushel.

Dispersion of Responses

The data contained in Tables 1 and 2 provides information about the average of the responses received in the survey. Another important aspect of these responses is the dispersion

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2007 and 2008, Purdue Land Value Survey, June 2008

			Rent/Acre		Change	Rent/bu. of Corn		Rent as % of June Land Value	
Area	Land Class	Corn bu/A	2007 $/A	2008 $/A	'07-'08 %	2007 $/bu.	2008 $/bu.	2007 %	2008 %
North	Top	189	180	211	17.2%	1.00	1.12	4.1	4.0
	Average	151	145	167	15.2%	1.00	1.10	4.0	3.8
	Poor	116	114	129	13.2%	1.02	1.12	3.8	3.8
Northeast	Top	174	162	188	16.0%	0.93	1.08	3.7	3.9
	Average	144	128	148	15.6%	0.89	1.03	3.5	3.6
	Poor	113	100	114	14.0%	0.91	1.01	3.2	3.4
W. Central	Top	181	187	207	10.7%	1.06	1.14	4.0	4.0
	Average	153	157	173	10.2%	1.07	1.13	3.9	3.8
	Poor	121	127	142	11.8%	1.12	1.17	4.0	3.8
Central	Top	180	181	201	11.0%	1.02	1.12	3.8	3.7
	Average	151	149	165	10.7%	1.01	1.10	3.8	3.6
	Poor	120	122	133	9.0%	1.04	1.11	3.8	3.5
Southwest	Top	181	168	189	12.5%	0.95	1.04	4.0	3.9
	Average	145	134	146	9.0%	0.93	1.01	4.1	3.8
	Poor	108	100	105	5.0%	0.90	0.97	4.1	3.9
Southeast	Top	163	128	147	14.8%	0.79	0.90	3.8	3.9
	Average	136	102	117	14.7%	0.77	0.87	3.5	3.5
	Poor	105	78	90	15.4%	0.78	0.86	3.1	3.2
Indiana	Top	179	171	194	13.5%	0.98	1.09	3.9	3.9
	Average	148	139	157	12.9%	0.97	1.06	3.8	3.7
	Poor	116	110	123	11.8%	0.99	1.07	3.7	3.6

PURDUE UNIVERSITY

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2010

Indiana Farmland Values & Cash Rents: Renewed Strength in a Weak Economy

Craig L. Dobbins, Professor and Kim Cook, Research Associate

A year ago with wreckage from the credit crisis still scattered across the national economy, tightened crop margins, and softness in the farm land market, there was concern that there would be a sharp downward correction in Indiana farmland. Based on the 2010 Purdue Farmland Value Survey*, this has not happened. Results of the June 2010 survey indicate Indiana land values not only did not decline but showed a strong increase. This report provides a summary of the survey results.

State-wide Farmland Values

For the state as a whole, the 2010 survey found the average value of bare Indiana cropland ranged from $3,501 per acre for poor quality land to $5,310 per acre for top quality land (Table 1). Average quality cropland had an average value of $4,419 per acre. For the 12-month period ending June 2010, there were increases in all three land qualities. The value of top, average, and poor quality land increased 6.3%, 5.5% and 4.5%, respectively.

Many factors influence farmland values. One often cited reason for different farmland values is soil productivity. To assess the productivity of the various land qualities, survey respondents estimated long-term corn yields for poor, average, and top quality land. The average of these long-term corn yield estimates provides a land productivity measure. For the state, the averages of the reported yields for poor, average, and top quality land were 121, 155, and 187 bushels per acre, respectively. State-wide, the value per estimated bushel of corn yield for poor, average, and top land qualities was $28.93, $28.56 and $28.41 per bushel, respectively.

Last year saw a decline in the average value of transitional land, farmland moving out of agriculture. This decline continued for the third straight year. The average value of transitional land in June 2010 was $8,306 per acre, a decline of 5.3%. The estimated value of land in this market continues to have a wide range. In June 2010, transitional land value estimates ranged from $3,000 to $32,000 per acre. This is a specialized market with the transitional land value strongly influenced by the planned use and location. Because of the wide variation in values of transitional land, the median value** may give a more meaningful picture than the arithmetic average. The median value of transitional land in 2010 was $7,000 per acre, the same value reported in 2009.

The state-wide average value of rural recreational land used for hunting and other recreational activities is $2,949 per acre, a decline of 14.6% when compared to June 2009. As with transitional land, there is a wide range of values for rural recreational land, again making the median value a more meaningful indictor of changes in value than the arithmetic average. The median value for rural

* *The individuals surveyed include rural appraisers, agricultural loan officers, FSA personnel, farm managers, and farmers. The results of the survey provide information about the general level and trend in farmland values.*

** *The median is the middle observation in data arranged in ascending or descending numerical order.*

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percentage values were lower than the values reported in 2009. After increasing last year, these percentages are again declining. Over the 36-year history of the survey, rent as a percentage of farmland value has averaged 5.8%.

Area Land Values

Survey responses were organized into six geographic regions (Figure 1). As in the past, there are geographic differences in land value changes. This year, the West Central and the Northeast region reported the strongest percentage increase in farmland values. Bare farmland in these areas increased 3.6% to 8.0% (Table 1). The Central and Southwest regions reported increases of 2.0% to 6.3%. The North region reported increases of less than 1% for all land qualities. The Southeast region reported a 2.5% increase for top quality land, little change for average quality land and a 6.3% decline for poor quality land. The decline in poor quality land in the Southeast was the only decline reported in 2010.

Per acre farmland values are the highest in the Central and West Central regions. The highest value per acre for top and average quality farmland was in the West Central region. The highest value per acre for poor quality farmland is in Central Indiana. The lowest farmland values statewide continue to be in the Southeast.

Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the highest in the West Central region, ranging from $30.04 to $30.89 per bushel. Closely following was the Central region, ranging from $29.05 to $30.73 per bushel. Per bushel values for the North and Northeast regions ranged from $27.24 to $28.94 per bushel. The Southeast had the lowest land values per bushel, ranging from $22.30 to $24.42 per bushel. In all regions except the Southwest and North, poor quality land was the most expensive per bushel.

Area Cash Rents

Changes in area cash rent also varied across the state. The strongest percentage increase in cash rent was in the Central region. Here cash rents increased from 2.4% to 3.8% (Table 2). This was followed by the West Central region with increases between 1.4% to 2.3%. The cash rent changes in Northeast and the Southeast Indiana ranged from 0.0% to 3.6%. Constant or declining cash rents were reported in the North region. The Southwest reported a decline in cash rents for all land qualities.

The highest average per acre cash rent is $225 per acre for top quality land in the West Central region. With a range in per acre rents of $147 to $225, this region has the highest cash rents across all land qualities. Cash rents are the lowest in the Southeast, $86 to $151 per acre.

Differences in productivity have a strong influence on per acre rents. To adjust for productivity differences, cash rent per acre was divided by the estimated corn yield. Rent per bushel of corn yield in the West Central region ranged from $1.13 to $1.15. Cash rent per bushel of corn yield in the North, Northeast, Central, and Southwest regions are similar, ranging from $0.95 to $1.10 per bushel. Per bushel cash rent in the Southeast ranged from $0.85 to $0.92 per bushel.

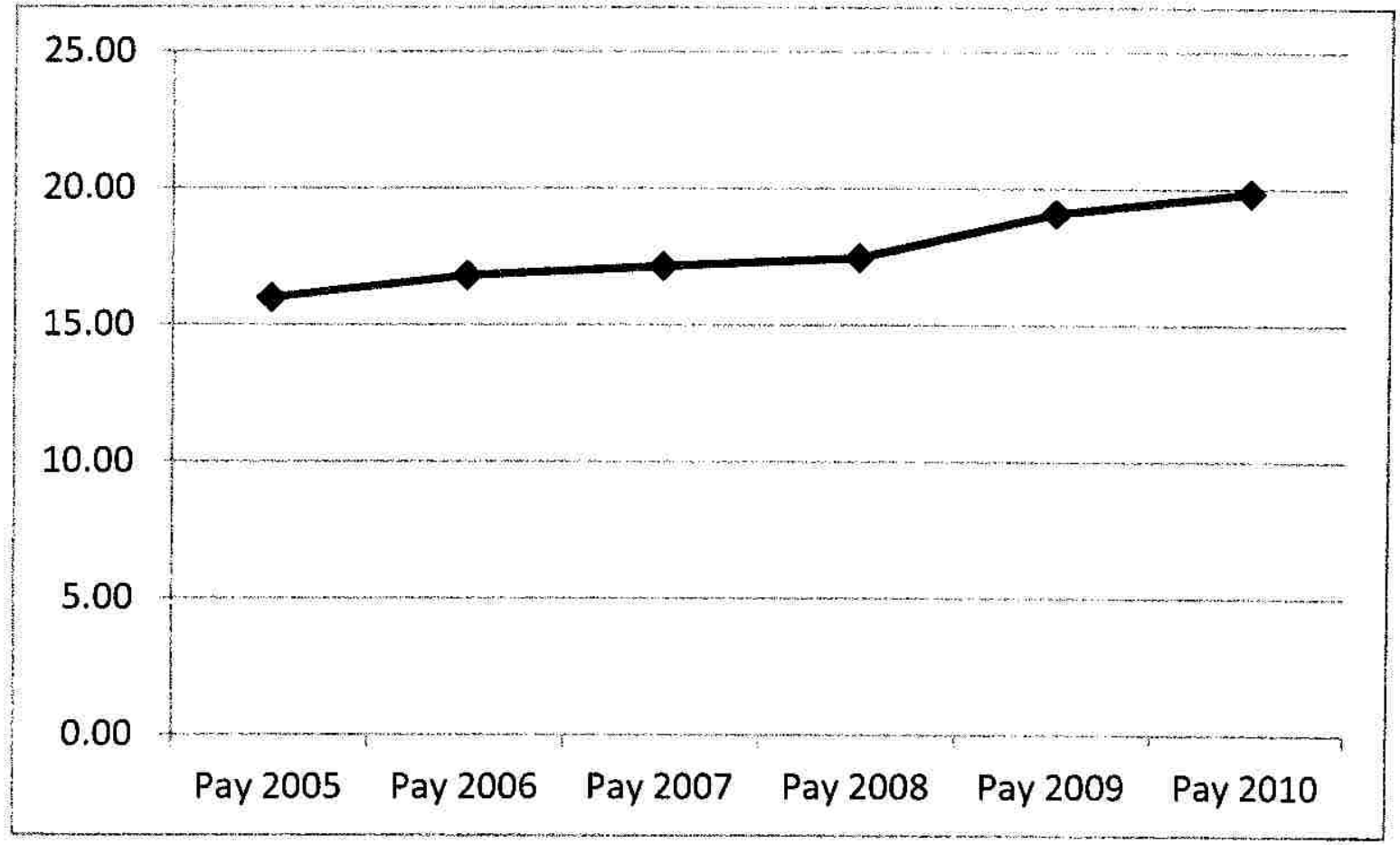
Distribution of Responses

The data contained in Tables 1 and 2 provides information about the average of the survey response. Averages are helpful in understanding the general direction in which land values and cash rents are moving. However, it is important to remember that averages are developed from several different responses. In some cases, responses are closely clustered around the average, people are in close agreement. In other cases, the responses

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2009 and 2010, Purdue Land Value Survey, June 2010

			Rent/Acre		Change	Rent/bu. of Corn		Rent as % of June Land Value	
Area	Land Class	Corn bu/A	2009 $/A	2010 $/A	'09-'10 %	2009 $/bu.	2010 $/bu.	2009 %	2010 %
North	Top	193	214	213	-0.5%	1.12	1.10	4.0	4.0
	Average	156	165	165	0.0%	1.10	1.06	3.8	3.8
	Poor	120	121	121	0.0%	1.12	1.01	3.7	3.7
Northeast	Top	181	192	192	0.0%	1.08	1.06	4.0	3.7
	Average	150	147	150	2.0%	1.03	1.00	3.7	3.5
	Poor	117	111	115	3.6%	1.01	0.98	3.4	3.4
W. Central	Top	195	220	225	2.3%	1.14	1.15	4.1	3.8
	Average	163	181	184	1.7%	1.13	1.13	3.9	3.7
	Poor	129	145	147	1.4%	1.17	1.14	3.8	3.7
Central	Top	190	201	206	2.5%	1.12	1.09	3.7	3.7
	Average	161	165	169	2.4%	1.10	1.05	3.6	3.5
	Poor	130	130	135	3.8%	1.11	1.04	3.4	3.4
Southwest	Top	185	200	192	-4.0%	1.04	1.04	4.0	3.6
	Average	149	154	146	-5.2%	1.01	0.98	4.0	3.7
	Poor	112	112	106	-5.4%	0.97	0.95	4.1	3.7
Southeast	Top	164	146	151	3.4%	0.90	0.92	4.1	4.1
	Average	135	118	119	0.8%	0.87	0.88	3.8	3.8
	Poor	101	86	86	0.0%	0.86	0.85	3.3	3.5
Indiana	Top	187	198	202	2.0%	1.09	1.08	4.0	3.8
	Average	155	158	161	1.9%	1.06	1.04	3.8	3.6
	Poor	121	121	124	2.5%	1.07	1.02	3.6	3.5

Average Net Tax Bill/Acre of Farmland



Average Net Tax Bill/Acre of Farmland

Pay 2005	16.00
Pay 2006	16.82
Pay 2007	17.17
Pay 2008	17.48
Pay 2009	19.10
Pay 2010	19.85

Indiana		Real Estate Loans	Operating Loans	Avg.
2005	Jan.	6.63	7.07	
	April	6.74	7.33	
	July	7.02	7.68	
	Oct.	7.25	8.02	
	Average	**6.91**	**7.53**	**7.22**
2006	Jan.	7.48	8.30	
	April	7.85	8.76	
	July	7.82	8.73	
	Oct.	7.74	8.71	
	Average	**7.72**	**8.63**	**8.18**
2007	Jan.	7.67	8.61	
	April	7.70	8.65	
	July	7.53	8.42	
	Oct.	7.09	7.82	
	Average	**7.50**	**8.38**	**7.94**
2008	Jan.	6.41	6.74	
	April	6.51	7.06	
	July	6.56	6.74	
	Oct.	6.23	6.21	
	Average	**6.43**	**6.69**	**6.56**
2009	Jan.	6.14	6.20	
	April	6.16	6.18	
	July	6.13	6.17	
	Oct.	6.13	6.23	
	Average	**6.14**	**6.20**	**6.17**
2010	Jan.	6.04	6.13	
	April	5.99	6.12	
	July	5.81	6.05	
	Oct.	5.70	5.85	
	Average	**5.89**	**6.04**	**5.97**

Source: Federal Reserve Bank of Chicago.
AgLetter (a quarterly newsletter)

The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1939 February 2008

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary

The largest annual increase in farmland values, 16 percent, in almost three decades highlighted an amazing year for agriculture in the Seventh Federal Reserve District. The values of both crop and livestock production set records in 2007 for the U.S. and, in all likelihood, the District. Based on 265 surveys returned by District agricultural bankers, the quarterly rise in the value of "good" agricultural land was 6 percent in the fourth quarter of 2007. Over half of the respondents expected farmland values to keep going up in the first quarter of 2008.

Agricultural credit conditions in the District strengthened in the fourth quarter of 2007. The index of non-real-estate farm loan repayment rates shot up to the highest value on record, while loan renewals and extensions dropped from a year ago. The index of funds availability was higher than at any point in the last four years. Loan demand softened in the fourth quarter of 2007, but was still higher than the previous year. Agricultural interest rates fell to their lowest levels in two years. Loan-to-deposit ratios averaged 77.2 percent for the fourth quarter of 2007, with 59 percent of banks below their desired ratio.

Farmland values

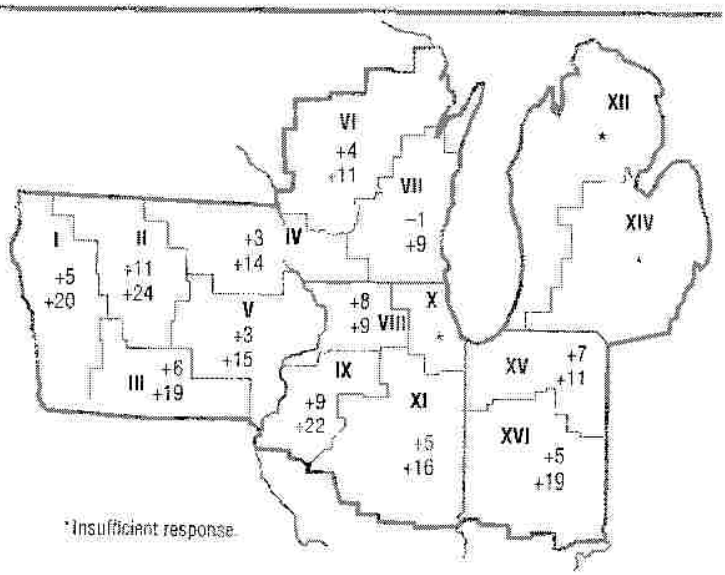
With a 16 percent annual increase for 2007 in the value of "good" agricultural land in the District, annual gains averaged 12 percent from 2004 through 2007. Adjusted for inflation, annual farmland values still rose an average of 8 percent per year over the past four years, versus an average of 2 percent during the previous 15 years (see chart 1 on next page). Iowa led the District with an 18 percent annual increase (see table and map below). Indiana was next with a 16 percent annual gain, followed by Illinois and Michigan with 15 percent annual gains. Wisconsin trailed with an 11 percent annual increase in farmland values. All District states had similar gains in farmland values in the fourth quarter as they had experienced in the third quarter, though some were slightly stronger.

Higher net farm income boosted farmland values toward the end of 2007 as corn and soybean prices moved even higher than a year ago. December cash corn prices rose to $3.76 per bushel, 25 percent above those in December 2006. Cash soybean prices jumped to $10.00 per bushel in December, 62 percent higher than the previous year's prices. National production estimates for 2007 from the U.S. Department of Agriculture (USDA) were a record 13.1 billion bushels for corn and 2.59 billion bushels for soybeans. The harvest was 24 percent above that of 2006 for corn and 19 percent below that of 2006 for soybeans.

Percent change in dollar value of "good" farmland

Top: October 1, 2007 to January 1, 2008
Bottom: January 1, 2007 to January 1, 2008

	October 1, 2007 to January 1, 2008	January 1, 2007 to January 1, 2008
Illinois	+6	+15
Indiana	+6	+16
Iowa	+6	+18
Michigan	+9	+15
Wisconsin	+2	+11
Seventh District	+6	+16



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[2]	Interest rates on farm loans: Feeder cattle[2]	Interest rates on farm loans: Real estate[2]
	(index)[1]	(index)[1]	(index)[1]	(percent)	(percent)	(percent)	(percent)
2005							
Jan–Mar	117	112	116	74.4	7.07	7.08	6.63
Apr–June	119	101	103	76.3	7.33	7.30	6.74
July–Sept	115	97	87	76.9	7.68	7.65	7.02
Oct–Dec	120	110	90	75.8	8.02	7.95	7.25
2006							
Jan–Mar	131	102	87	76.7	8.30	8.27	7.48
Apr–June	115	101	85	78.0	8.76	8.66	7.85
July–Sept	124	95	87	79.1	8.73	8.70	7.82
Oct–Dec	109	116	130	76.6	8.71	8.70	7.74
2007							
Jan–Mar	128	113	131	78.4	8.61	8.60	7.67
Apr–June	121	115	117	77.8	8.65	8.63	7.70
July–Sept	118	118	122	78.1	8.42	8.40	7.53
Oct–Dec	110	125	148	77.2	7.82	7.89	7.09

Note: Historical data on Seventh District agricultural credit conditions is available for download from the *AgLetter* homepage, www.chicagofed.org/economic_research_and_data/ag_letter.cfm.
[1]At end of period.
[2]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percent of bankers that responded "lower" from the percent that responded "higher" and adding 100.

reporting higher funds availability and 5 percent lower. Collateral requirements were slightly tighter at District banks, as 11 percent raised the amount of collateral required during the October–December period in 2007. More bankers than a year ago indicated a tightening of credit standards for agricultural loans in the fourth quarter versus the previous year, but there also were more bankers who reported easing standards. As was the case the previous year, only 1 percent of District customers with operating credit were not likely to qualify for new credit in 2008, according to respondents.

Interest rates for agricultural loans declined to the lowest levels in two years. As of January 1, 2008, the District averages for interest rates were 7.82 percent on new operating loans and 7.09 percent on farm real estate loans. Interest rates on agricultural loans were lowest in Illinois (7.49 percent on operating loans and 6.93 percent on farm mortgages). Interest rates on agricultural loans were highest in Michigan (8.10 percent on operating loans and 7.44 percent on farm mortgages).

Looking forward

For January, February, and March of 2008, 41 percent of the respondents expected higher non-real-estate loan volumes, while 16 percent expected lower volumes. Higher loan volumes were anticipated for operating, farm machinery, and grain storage construction loans. With little change in dairy loans, lower volumes were anticipated for feeder cattle loans and loans guaranteed by the Farm Service Agency. The volume of mortgages on agricultural real estate will continue to grow, with 32 percent of the bankers expecting higher real estate loan volumes in the first quarter of 2008 and 9 percent expecting lower volumes.

Even more strongly than last year, respondents forecast this year's capital expenditures by farmers to increase from the previous year's levels. With 55 percent expecting higher spending on land purchases, improvements, buildings, and facilities in 2008 than in 2007, the agricultural sector contrasted sharply with the downturn in residential real estate and construction. And with only 2 percent of respondents expecting lower purchases, 83 percent of the bankers thought purchases of machinery and equipment would climb in 2008, and 67 percent thought that truck and auto purchases by farmers would rise.

David B. Oppedahl, business economist

AgLetter (ISSN 1080-8639) is published quarterly by the Research Department of the Federal Reserve Bank of Chicago. It is prepared by David B. Oppedahl, business economist, and members of the Bank's Research Department. The information used in the preparation of this publication is obtained from sources considered reliable, but its use does not constitute an endorsement of its accuracy or intent by the Federal Reserve Bank of Chicago.

The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1947 February 2010

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary

The annual change in farmland values was positive at 2 percent in 2009 for the Seventh Federal Reserve District, though 2009's first three quarters had negative year-over-year comparisons. The quarterly increase in the value of "good" agricultural land was 2 percent as well, based on 214 surveys from agricultural bankers. Over 80 percent of respondents expected farmland values to stay unchanged from January through March of 2010 in their respective areas.

The Seventh District's agricultural credit conditions were mixed in the fourth quarter of 2009 because of greater financial stress relative to a year ago. Non-real-estate loan demand was almost the same in October through December of 2009 compared with the same period of the previous year. Funds availability also improved again in the fourth quarter of 2009. However, farm loan repayment rates in the final quarter of 2009 were below the level of a year ago, and rates of loan renewals and extensions were higher than a year earlier. Agricultural interest rates remained low. Averaging 75.4 percent, loan-to-deposit ratios were essentially the same as in the third quarter of 2009.

Farmland values

With a 2 percent annual increase for 2009 in the value of "good" agricultural land, the District experienced its smallest change in a decade (see chart 1 on next page). Still, this small annual increase, registered for the final quarter of 2009, was better than the year-over-year comparisons for each of the three previous quarters. Not all District states contributed to the increase in farmland values for 2009: Michigan and Wisconsin farmland values fell 6 percent and 1 percent for the year, respectively (see table and map below). At the other end of the spectrum, Indiana and Iowa had higher annual increases in farmland values than the District average. The annual gain for Illinois matched the District average.

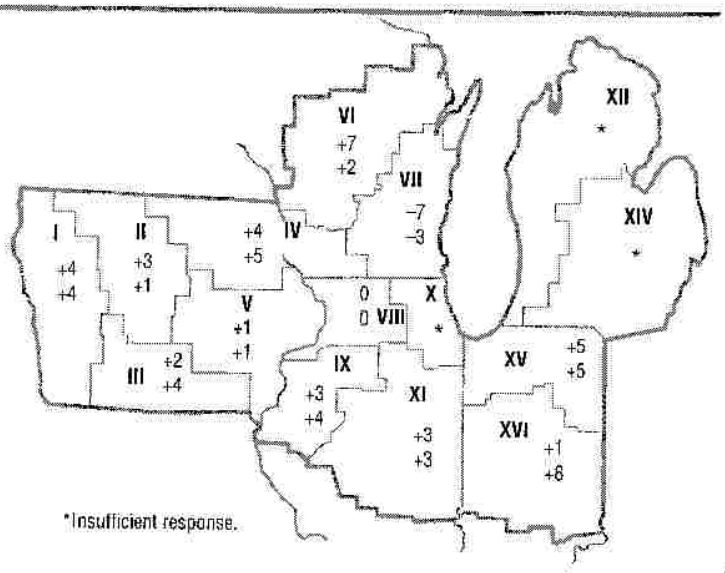
District land values rose 2 percent from the third quarter to the fourth quarter of 2009, reflecting higher agricultural prices in the final three months of the year. Michigan had a quarterly decrease in land values, diverging from the other states in the District.

Adjusted for inflation, annual farmland values increased only 1 percent in 2009 for the District—the same as in 2008. Even though the annual index of nominal farmland values had more than doubled by the end of 2009 from its 1981 peak (see chart 2 on next page), the index of inflation-adjusted farmland values only approached the level of 1981. The compound annual growth rate in farmland values (adjusted for inflation) was 1.8 percent from 1970 through 2009. So, 2009's gain in land values was below the pace seen over the past four decades.

Percent change in dollar value of "good" farmland

Top: October 1, 2009 to January 1, 2010
Bottom: January 1, 2009 to January 1, 2010

	October 1, 2009 to January 1, 2010	January 1, 2009 to January 1, 2010
Illinois	+2	+2
Indiana	+3	+7
Iowa	+3	+4
Michigan	−2	−6
Wisconsin	+1	−1
Seventh District	+2	+2



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[a]	Interest rates on farm loans: Feeder cattle[a]	Interest rates on farm loans: Real estate[a]
	(index)[b]	(index)[b]	(index)[b]	(percent)	(percent)	(percent)	(percent)
2008							
Jan–Mar	110	129	147	75.9	6.74	6.86	6.41
Apr–June	101	124	137	75.2	7.06	6.77	6.51
July–Sept	117	103	115	76.8	6.74	6.85	6.56
Oct–Dec	115	110	113	76.4	6.21	6.33	6.23
2009							
Jan–Mar	116	112	105	76.2	6.20	6.31	6.14
Apr–June	88	118	93	77.3	6.18	6.36	6.16
July–Sept	95	121	89	75.3	6.17	6.35	6.13
Oct–Dec	102	125	92	75.4	6.23	6.40	6.13

[a]At end of period.
[b]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percentage of bankers that responded "lower" from the percentage that responded "higher" and adding 100.
Note: Historical data on Seventh District agricultural credit conditions are available for download from the *AgLetter* webpage, www.chicagofed.org/webpages/publications/agletter/index.cfm.

rates of loan repayment and 21 percent reporting lower rates. Repayment rates weakened in all District states except Iowa. Wisconsin was particularly challenged, with over half of the respondents noting lower repayment rates. Over 8 percent of the volume of Wisconsin banks' agricultural loan portfolios was classified as having major or severe repayment problems, versus 4 percent for the District. Both of these numbers were under 3 percent at the end of 2008.

The availability of funds grew during the October through December period of 2009 relative to the same period of 2008. The index of funds availability climbed to 125, since 30 percent of the responding bankers had more funds available to lend and 5 percent had fewer. However, the amount of collateral required for loans increased in the fourth quarter of 2009 at 25 percent of the banks. Tighter credit standards for agricultural loans relative to the fourth quarter of 2008 were instituted at 44 percent of the reporting banks in 2009. Almost 4 percent of District customers with operating credit would probably not receive new credit lines in 2010; Wisconsin, at 11 percent, faced the highest level of troubled operating credit.

Interest rates on agricultural loans remained at low levels in the fourth quarter of 2009. Though operating loan rates edged up, mortgage rates were unchanged from three months earlier. As of January 1, 2010, the District averages for interest rates were 6.23 percent on new operating loans and 6.13 percent on farm real estate loans.

Looking forward

Respondents expected to make about the same volumes of non-real-estate loans in the first quarter of 2010 as they made in the first quarter of 2009. Lower volumes were predicted for feeder cattle, dairy, farm machinery, and grain storage construction loans; higher volumes were predicted for operating loans and loans guaranteed by the Farm Service Agency. Responding bankers anticipated farm real estate loan volumes to lessen during January, February, and March of 2010 relative to the same months of 2009.

Capital expenditures by farmers in 2010 were expected to be lower than in 2009. Thirteen percent of the respondents anticipated increased spending in 2010 on land purchases or improvements, while 37 percent anticipated reduced spending. For buildings and facilities, 17 percent predicted higher spending and 42 percent predicted lower spending. With 19 percent of respondents anticipating higher purchases and 36 percent anticipating lower purchases, the prospects for sales of machinery and equipment were not much better. Expenditures on trucks and autos were forecasted to decline as well, with 19 percent more of the respondents expecting lower rather than higher spending by farmers. Reduced investments in capital goods for farming would support the view that agriculture will continue to face challenges throughout 2010.

David B. Oppedahl, *business economist*

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The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1951 February 2011

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary

The annual growth in agricultural land values was 12 percent in 2010 for the Seventh Federal Reserve District—the second-largest increase in the past 30 years. There was a 6 percent rise in the value of "good" farmland in the fourth quarter relative to the third quarter of 2010, based on 212 surveys returned by agricultural bankers from around the District. Slightly more than half of the respondents expected farmland values to keep rising during the January through March period of 2011.

Agricultural credit conditions strengthened in the fourth quarter of 2010, even with non-real-estate loan demand about the same as a year ago. For the October through December period of 2010 compared with the same period of the previous year, funds availability, farm loan repayment rates, and rates of loan renewals and extensions all improved. Interest rates on farm loans moved even lower. The average loan-to-deposit ratio of 71.8 percent was the lowest in seven years.

Farmland values

The 12 percent annual increase in the value of "good" agricultural land for 2010 was in a tie for the second-largest increase of the past 30 years (see chart 1 on next page). After adjusting for inflation, the 2010 annual increase (10 percent) became the second largest since 1976 all by itself. Iowa farmland values led the surge, closely followed by those of Illinois and Indiana; Michigan and Wisconsin farmland values brought up the rear (see table and map below). The diversity of agriculture in Michigan and Wisconsin probably limited the growth in farmland values, since the principal driver of the current boom has been corn and soybean production.

District agricultural land values increased 6 percent from the third quarter to the fourth quarter of 2010. This quarterly gain matched the largest rise in any quarter since 1977. Illinois, Indiana, and Iowa had larger quarterly increases than Wisconsin, while Michigan had a decrease.

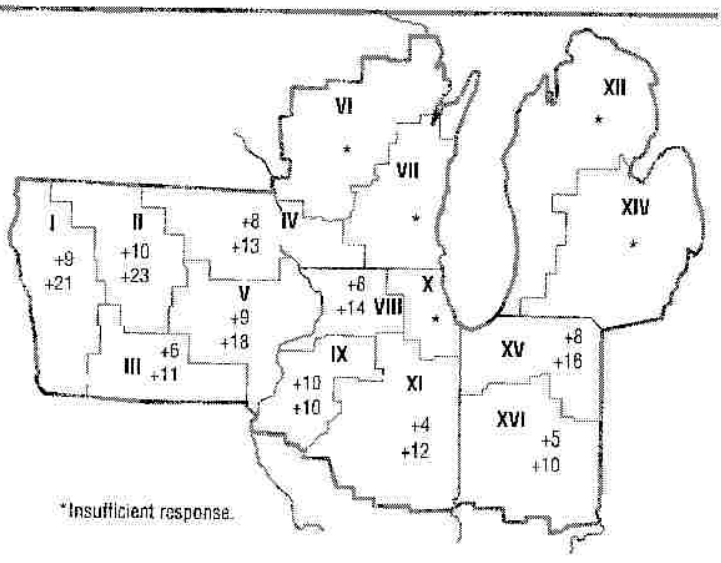
Although the annual index of nominal farmland values set a new high, the index of inflation-adjusted farmland values remained a shade below the peak of 1979 (see chart 2 on next page). In contrast with the prior peak, economic conditions reflected historically low interest rates and inflation rates, dampening the returns on traditional savings vehicles (such as certificates of deposit). Thus, farmers sought to maximize the returns on their funds by plowing money into farmland purchases and expanding their operations to enhance future earnings. Since farmland values bottomed in 1986, the compound annual growth rate for farmland values (adjusted for inflation) has been 4 percent.

Overall, 2010 was a stellar year for agriculture in the Midwest. The only major sector that did not finish the year strongly was dairy, which still had seen milk prices move

Percent change in dollar value of "good" farmland

Top: October 1, 2010 to January 1, 2011
Bottom: January 1, 2010 to January 1, 2011

	October 1, 2010 to January 1, 2011	January 1, 2010 to January 1, 2011
Illinois	+7	+11
Indiana	+6	+12
Iowa	+8	+18
Michigan	−1	+4
Wisconsin	+2	+7
Seventh District	+6	+12



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[2]	Feeder cattle[2]	Real estate[2]
	(index)[1]	(index)[1]	(index)[1]	(percent)	(percent)	(percent)	(percent)
2009							
Jan–Mar	116	112	105	76.2	6.20	6.31	6.14
Apr–June	88	118	93	77.3	6.18	6.36	6.16
July–Sept	95	121	89	75.3	6.17	6.35	6.13
Oct–Dec	102	125	92	75.4	6.23	6.40	6.13
2010							
Jan–Mar	109	127	79	73.7	6.13	6.25	6.04
Apr–June	98	122	85	74.5	6.12	6.25	5.99
July–Sept	90	138	114	73.2	6.05	6.14	5.81
Oct–Dec	101	142	142	71.8	5.85	6.02	5.70

[1]At end of period.
[2]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percentage of bankers that responded "lower" from the percentage that responded "higher" and adding 100.
Note: Historical data on Seventh District agricultural credit conditions are available for download from the *AgLetter* webpage, www.chicagofed.org/webpages/publications/agletter/index.cfm.

funds availability edged up to 142, as funds availability was higher for 44 percent of the responding bankers and lower for 2 percent. Only 11 percent of the banks increased the required amount of collateral to qualify for farm loans during the October through December period of 2010. Thirty-one percent of the banks tightened credit standards for agricultural loans in the fourth quarter of 2010 relative to the fourth quarter of 2009, and 6 percent eased credit standards. Thus, agricultural operators should have noted credit availability had deteriorated less than in the prior year. Responding bankers ascertained that less than 2 percent of their customers with operating credit were unlikely to obtain new lines of credit in 2011. Michigan and Wisconsin had higher levels of financially distressed customers; 4 percent of customers in those states were likely to be denied new credit lines.

Agricultural interest rates decreased yet again in the fourth quarter of 2010. As of January 1, 2011, the average interest rates in the District were 5.85 percent for operating loans and 5.70 percent for farm real estate loans.

Looking forward

Responding bankers expected similar volumes of non-real-estate farm loans to be generated in the January through March period of 2011 as in the same period of 2010. Respondents anticipated higher volumes of operating, farm machinery, and grain storage construction loans, as well as more loans guaranteed by the Farm Service Agency. They expected lower volumes for feeder cattle and dairy loans, although there was more hope for generating dairy loans in Wisconsin. Respondents predicted farm real estate loan volumes would pick up during the first quarter of 2011 relative to the same quarter of 2010.

There was a major turnaround in expectations for capital expenditures by farmers in 2011 compared with 2010. With 54 percent of the responding bankers predicting higher spending in 2011 on land purchases or improvements and just 7 percent predicting lower spending, the spending climate shifted dramatically from a year ago. For buildings and facilities, 44 percent of responding bankers anticipated increased expenditures and 8 percent anticipated decreased expenditures. The biggest reversal was for sales of machinery and equipment, with 67 percent of respondents forecasting higher purchases and 3 percent forecasting lower purchases. Truck and auto sales to farmers were expected to rise also: 57 percent of the responding bankers predicted higher expenditures by farmers and 5 percent predicted lower expenditures in 2011. The expected willingness of farmers to make renewed investments in land, buildings, machinery, equipment, and vehicles indicated that the agricultural sector rebounded from the recession more quickly than the overall economy. Now, the issues facing agriculture will be how to manage the volatility seen in recent years and how to prepare for when the good times slow down.

David B. Oppedahl, *business economist*

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Income Approach: November, Annual Average, & Marketing Year Average Prices

March 1, 2013

Line #	Column	A	B	C	D	E	F	G	H	I	J	K	L	Source or Formula:
		2005		2006		2007		2008		2009		2010		
		Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	
1	Yield	154	49	157	50	154	46	160	45	171	49	157	48.5	IASS - Crop Summary
2	Price - November	1.71	5.58	3.03	6.13	3.68	9.65	4.04	9.47	3.66	9.63	4.81	11.50	IASS - Crop Prices
3	Price - Annual Avg.	1.97	6.02	2.39	5.82	3.52	8.01	4.98	11.78	3.85	10.35	3.98	10.33	DLGF Calculation
4	Price - Market Avg.	1.99	5.66	2.00	5.78	3.17	6.53	4.39	10.20	4.10	10.20	3.66	9.80	IASS - Crop Prices
5	GI - November	263.34	273.42	475.71	306.50	566.72	443.90	646.40	426.15	625.86	471.87	755.17	557.75	Line 1 times Line 2
6	GI -Annual Avg.	303.38	294.98	375.23	291.00	542.08	368.46	796.80	530.10	658.35	507.15	624.86	501.01	Line 1 times Line 3
7	GI - Market Avg.	306.46	277.34	314.00	289.00	488.18	300.38	702.40	459.00	701.10	499.80	574.62	475.30	Line 1 times Line 4
8	AA v Nov	40.04	21.56	-100.48	-15.50	-24.64	-75.44	150.40	103.95	32.49	35.28	-130.31	-56.75	Line 6 minus Line 5
9	MA v Nov	43.12	3.92	-161.71	-17.50	-78.54	-143.52	56.00	32.85	75.24	27.93	-180.55	-82.45	Line 7 minus Line 5
10	NRTL - November	41		123		238		132		88		247		DLGF Calculation
11	NRTL - Annual Avg	72		65		188		259		122		153		Line 10 + or - Avg. Line 8
12	NRTL - Market Avg	65		33		127		176		140		116		Line 10 + or - Avg. Line 9
13	NRTL Average	59		74		184		189		116		172		Average Lines 10, 11, & 12
14	FRBC RE Rate	0.0691		0.0772		0.0750		0.0643		0.0614		0.0589		Fed. Res. Bank of Chicago
15	FRBC OP Rate	0.0753		0.0863		0.0838		0.0669		0.0620		0.0604		Fed. Res. Bank of Chicago
16	Avg. FRBC Rate	0.0722		0.0818		0.0794		0.0656		0.0617		0.0597		Average Lines 14 & 15
17	Operating Market Value In Use	817		905		2,317		2,881		1,880		2,881		Line 13 / Line 16

NRTL = Net Return To Land
FRBC = Federal Reserve Bank of Chicago

Line #	Doster/Huie -Table 1 Updated-October, 2012	C 2005 Corn	D Beans	E 2006 Corn	F Beans	G 2007 Corn	H Beans	I 2008 Corn	J Beans	K 2009 Corn	L Beans	K 2010 Corn	L Beans	Source of Information
1	Yield per Acre	154	49	157	50	154	46	160	45	171	49	157	48.5	IN Ag. Stats. Servic
2	Price per Bu. - November	1.71	5.58	3.03	6.13	3.68	9.65	4.04	9.47	3.66	9.63	4.81	11.50	IN Ag. Stats. Servic
3	Sales	263	273	476	307	567	444	646	426	626	472	755	558	Line 1 X Line 2
4	Less Variable Costs	184	114	222	125	239	120	380	182	425	223	342	183	Purdue Crop Guide
5	Contribution Margin	79	159	254	182	328	324	266	244	201	249	413	375	Line 3 - Line 4
6	Plus Government Pymt.	71		41		23		25		23		29		IN Ag. Stats. Servic
7	Total Contribution Margin	155		238		337		268		236		408		Lines 5 + 6 / 2
	Less Overhead:													
8	Annual Machinery	52		52		43		58		66		77		Purdue Crop Guide
9	Drying/Handling	7		7		9		9		11		12		Purdue Crop Guide
10	Family/Hired Labor	39		39		30		52		52		52		Purdue Crop Guide
11	Real Estate Tax	16		17		17		17		19		20		DLGF Study
12	Net ReturnTo Land - Nov.	41		123		238		132		88		247		Line 7 - 8,9,10, 11

Source for Calculation: Doster/Huie Publication titled "A Method for Assessing Indiana Cropland-An Income Approach to Value" dated June 24, 1999 (See Table 1)

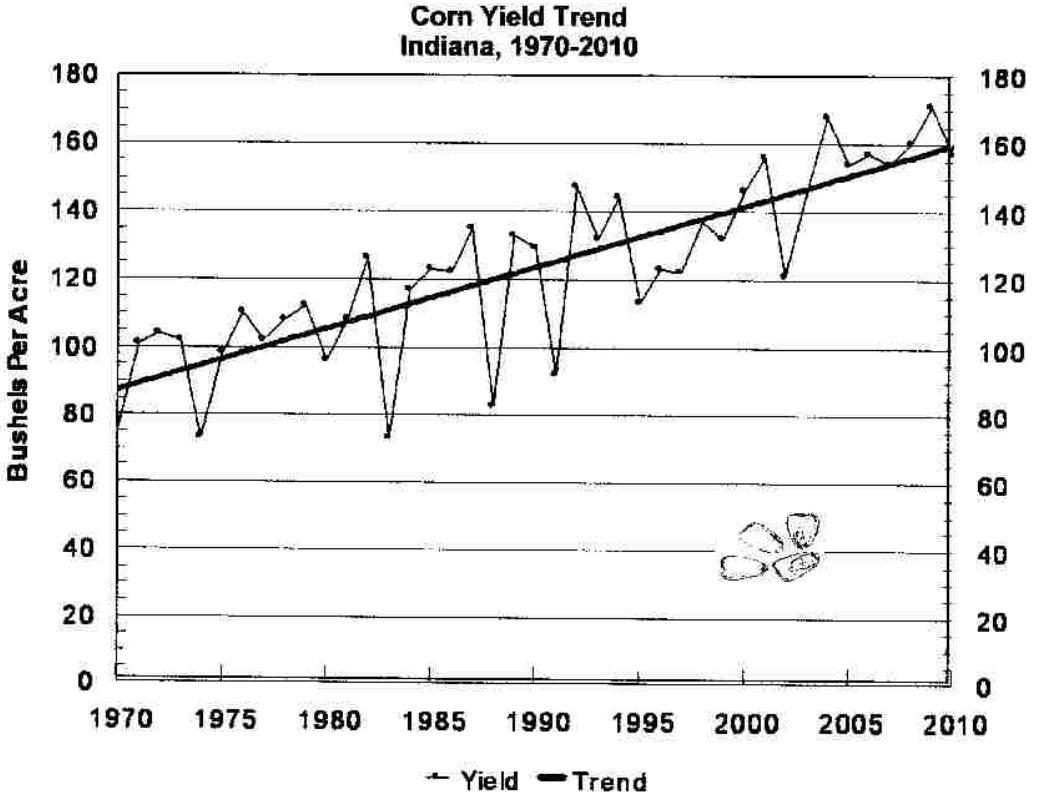
Indiana Corn Yields:		Indiana Soybean Yields:	
1980	96	1980	36
1981	108	1981	33
1982	126	1982	38.5
1983	73	1983	31
1984	117	1984	34.5
1985	123	1985	41.5
1986	122	1986	37
1987	135	1987	40
1988	83	1988	27.5
1989	133	1989	36.5
1990	129	1990	41
1991	92	1991	39
1992	147	1992	43
1993	132	1993	46
1994	144	1994	47
1995	113	1995	39.5
1996	123	1996	38
1997	122	1997	43.5
1998	137	1998	42
1999	132	1999	39
2000	146	2000	46
2001	156	2001	49
2002	121	2002	41.5
2003	146	2003	38
2004	168	2004	51.5
2005	154	2005	49
2006	157	2006	50
2007	154	2007	46
2008	160	2008	45
2009	171	2009	49
2010	157	2010	48.5
2011	IASS has not published yet.		

Source: Indiana Agricultural Statistics Service

CROP SUMMARY

CORN FORECAST AND FINAL YIELD
INDIANA, 1987-2010

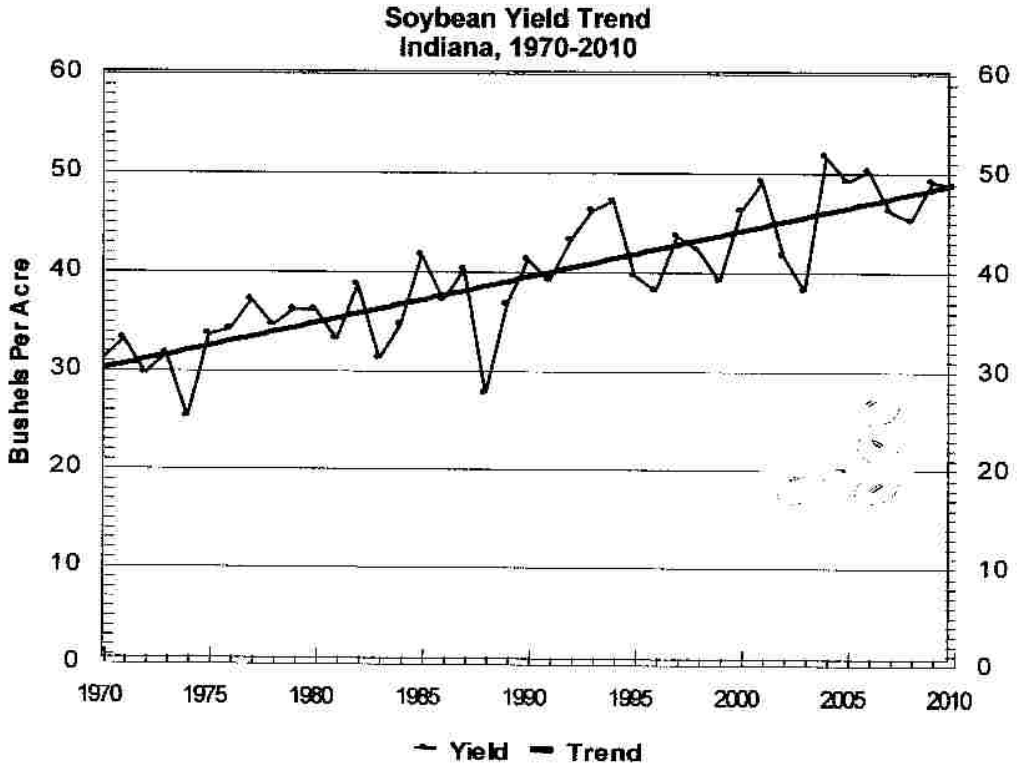
Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1987	135	135	135	135	135
1988	70	74	74	78	83
1989	123	128	130	134	133
1990	128	132	132	130	129
1991	98	93	94	94	92
1992	130	130	133	143	147
1993	140	136	133	128	132
1994	132	132	137	141	144
1995	135	125	119	116	113
1996	118	118	120	124	123
1997	127	122	120	120	122
1998	136	139	137	137	137
1999	130	128	128	130	132
2000	155	155	151	147	146
2001	147	152	160	160	156
2002	124	119	117	117	121
2003	144	145	148	150	146
2004	168	168	168	168	168
2005	145	149	149	151	154
2006	167	167	165	159	157
2007	157	160	158	158	154
2008	164	162	160	160	160
2009	163	163	166	166	171
2010	**176**	**170**	**160**	**160**	**157**



CROP SUMMARY

SOYBEAN FORECAST AND FINAL YIELD
INDIANA, 1987-2010

Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1987	42.0	41.0	40.0	40.0	40.0
1988	29.0	30.0	30.0	28.0	27.5
1989	39.0	39.0	39.0	39.0	36.5
1990	36.0	37.0	39.0	41.0	41.0
1991	35.0	35.0	38.0	39.0	39.0
1992	41.0	41.0	41.0	42.0	43.0
1993	45.0	47.0	47.0	45.0	46.0
1994	43.0	43.0	46.0	46.0	47.0
1995	43.0	44.0	40.0	39.0	39.5
1996	35.0	35.0	38.0	39.0	38.0
1997	44.0	42.0	42.0	44.0	43.5
1998	45.0	45.0	42.0	42.0	42.0
1999	41.0	40.0	39.0	38.0	39.0
2000	46.0	46.0	46.0	46.0	46.0
2001	46.0	48.0	49.0	49.0	49.0
2002	41.0	41.0	40.0	41.0	41.5
2003	43.0	43.0	40.0	38.0	38.0
2004	45.0	45.0	51.0	53.0	51.5
2005	46.0	45.0	46.0	48.0	49.0
2006	49.0	50.0	51.0	51.0	50.0
2007	47.0	43.0	43.0	44.0	46.0
2008	46.0	43.0	42.0	44.0	45.0
2009	45.0	43.0	43.0	46.0	49.0
2010	**49.0**	**50.0**	**50.0**	**50.0**	**48.5**



Corn Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	1.88	1.91	1.97	1.99	2.10	2.51	2.90	2.86	2.78	2.62	2.56	2.65	2.39	2.08
1989	2.72	2.64	2.70	2.66	2.70	2.63	2.65	2.48	2.38	2.32	2.28	2.37	2.54	2.65
1990	2.46	2.43	2.49	2.68	2.81	2.85	2.81	2.75	2.44	2.21	2.18	2.25	2.53	2.47
1991	2.35	2.37	2.43	2.42	2.46	2.37	2.34	2.41	2.37	2.36	2.36	2.44	2.39	2.31
1992	2.55	2.55	2.61	2.58	2.55	2.55	2.36	2.18	2.18	1.92	1.95	1.96	2.33	2.45
1993	2.06	2.04	2.17	2.23	2.20	2.17	2.31	2.37	2.26	2.26	2.52	2.73	2.28	2.09
1994	2.73	2.78	2.76	2.67	2.63	2.66	2.27	2.12	2.18	1.98	1.93	2.12	2.40	2.51
1995	2.25	2.27	2.34	2.41	2.45	2.56	2.76	2.73	2.76	2.85	3.11	3.33	2.65	2.25
1996	3.20	3.42	3.81	4.31	4.52	4.70	4.70	4.55	3.63	2.80	2.69	2.64	3.75	3.38
1997	2.77	2.73	2.86	2.96	2.86	2.73	2.59	2.60	2.60	2.62	2.60	2.61	2.71	2.78
1998	2.66	2.62	2.61	2.46	2.36	2.29	2.17	1.91	1.96	1.97	2.06	2.23	2.28	2.53
1999	2.26	2.20	2.22	2.24	2.15	2.12	1.94	1.97	1.82	1.74	1.75	1.89	2.03	2.11
2000	1.97	2.06	2.08	2.15	2.15	1.95	1.65	1.63	1.67	1.75	1.83	2.06	1.91	1.88
2001	2.03	2.01	2.02	1.98	1.95	1.84	1.97	2.01	1.93	1.83	1.83	1.92	1.94	1.90
2002	1.98	1.99	1.91	1.91	2.05	2.07	2.25	2.58	2.55	2.38	2.41	2.43	2.21	1.98
2003	2.42	2.44	2.44	2.47	2.49	2.44	2.28	2.25	2.27	2.15	2.25	2.46	2.36	2.41
2004	2.50	2.75	2.96	3.07	3.08	2.80	2.57	2.44	2.07	1.88	1.81	1.95	2.49	2.53
2005	2.09	2.01	2.01	1.96	2.02	2.07	2.20	1.97	1.80	1.72	1.71	2.04	1.97	1.99
2006	2.09	2.07	2.15	2.20	2.26	2.21	2.31	2.08	2.32	2.70	3.03	3.23	2.39	2.00
2007	3.16	3.53	3.64	3.54	3.65	3.73	3.36	3.27	3.32	3.34	3.68	4.07	3.52	3.17
2008	4.23	4.67	4.96	5.49	5.82	5.89	5.92	5.67	4.73	4.15	4.04	4.14	4.98	4.39
2009	4.46	4.06	3.92	4.11	4.12	4.14	3.64	3.45	3.31	3.70	3.66	3.62	3.85	4.10
2010	3.79	3.69	3.62	3.51	3.65	3.55	3.69	3.80	4.24	4.51	4.81	4.94	3.98	3.66
2011	4.97	5.77	5.79	6.73	6.60	6.82	7.04	7.20 IASS has not published this information yet.						

Soybean Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	5.89	5.93	6.29	6.81	7.24	8.71	8.95	8.60	8.09	7.64	7.46	7.71	7.44	5.94
1989	7.76	7.44	7.64	7.32	7.37	7.18	6.95	6.26	5.83	5.62	5.74	5.77	6.74	7.55
1990	5.95	5.75	5.77	5.98	6.14	6.08	6.16	6.13	6.08	5.91	5.77	5.74	5.96	5.79
1991	5.76	5.78	5.76	5.82	5.74	5.57	5.40	5.66	5.76	5.52	5.52	5.51	5.65	5.81
1992	5.60	5.69	5.81	5.75	5.96	6.05	5.69	5.52	5.44	5.25	5.37	5.52	5.64	5.68
1993	5.66	5.65	5.77	5.87	5.94	6.03	6.82	6.84	6.17	5.97	6.42	6.75	6.16	5.61
1994	6.67	6.76	6.82	6.70	6.89	6.74	6.19	5.70	5.49	5.33	5.34	5.54	6.18	6.31
1995	5.54	5.50	5.66	5.68	5.70	5.86	6.10	5.98	6.07	6.24	6.61	6.98	5.99	5.53
1996	6.91	7.16	7.13	7.65	7.95	7.72	7.82	8.10	8.02	6.94	6.90	6.98	7.44	6.73
1997	7.31	7.34	7.94	8.38	8.60	8.22	7.71	7.18	6.54	6.62	6.88	6.68	7.45	7.34
1998	6.80	6.73	6.57	6.37	6.41	6.42	6.38	5.74	5.24	5.23	5.49	5.51	6.07	6.59
1999	5.41	4.94	4.71	4.77	4.63	4.50	4.28	4.55	4.54	4.58	4.56	4.56	4.67	5.05
2000	4.65	4.90	5.06	5.18	5.27	5.11	4.62	4.63	4.71	4.51	4.57	4.93	4.85	4.71
2001	4.74	4.53	4.52	4.25	4.43	4.62	4.98	5.15	4.60	4.17	4.18	4.25	4.54	4.61
2002	4.29	4.34	4.56	4.63	4.79	5.05	5.51	5.67	5.53	5.24	5.53	5.61	5.06	4.42
2003	5.62	5.69	5.70	5.92	6.28	6.15	5.87	5.84	6.49	6.90	7.25	7.44	6.26	5.55
2004	7.38	8.38	9.43	9.76	9.62	9.45	8.89	7.18	5.51	5.24	5.22	5.47	7.63	7.67
2005	5.57	5.46	6.02	5.99	6.32	6.76	6.93	6.29	5.76	5.60	5.58	6.01	6.02	5.66
2006	6.06	5.83	5.76	5.69	5.83	5.80	5.85	5.53	5.40	5.63	6.13	6.38	5.82	5.78
2007	6.44	6.95	7.17	7.13	7.36	7.83	7.97	8.03	8.49	8.81	9.65	10.30	8.01	6.53
2008	10.10	12.30	11.70	12.30	12.80	14.50	14.50	13.50	11.00	9.78	9.47	9.70	11.80	10.20
2009	10.30	9.88	9.49	10.10	11.10	11.90	11.10	11.00	9.97	9.49	9.63	10.20	10.35	10.20
2010	10.00	9.82	9.70	9.79	9.77	9.79	10.10	10.50	10.10	10.60	11.50	12.30	10.33	9.80
2011	11.80	12.90	12.70	13.30	13.70	13.40	13.70	13.40	IASS has not published this information yet.					

CROP PRICES

MONTHLY PRICES RECEIVED BY FARMERS CROPS, INDIANA, 2004-2011 1/

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Marketing Year Avg.
						Corn (Dollars per Bushel)							
2004-05	2.07	1.88	1.81	1.95	2.09	2.01	2.01	1.96	2.02	2.07	2.20	1.97	1.99
2005-06	1.80	1.72	1.71	2.04	2.09	2.07	2.15	2.20	2.26	2.21	2.31	2.08	2.00
2006-07	2.32	2.70	3.03	3.23	3.16	3.53	3.64	3.54	3.65	3.73	3.36	3.27	3.17
2007-08	3.32	3.34	3.68	4.07	4.23	4.67	4.96	5.49	5.82	5.89	5.92	5.67	4.39
2008-09	4.73	4.15	4.04	4.14	4.46	4.06	3.92	4.11	4.12	4.14	3.64	3.45	4.10
2009-10	3.31	3.70	3.66	3.62	3.79	3.69	3.62	3.51	3.65	3.55	3.69	3.80	3.66
2010-11	**4.24**	**4.51**	**4.81**	**4.94**	**4.97**	**5.77**	**5.79**	**6.73**	**6.60**	**6.82**	**7.04**	**7.20**	**5.50**
						Soybeans (Dollars per Bushel)							
2004-05	5.51	5.24	5.22	5.47	5.57	5.46	6.02	5.99	6.32	6.76	6.93	6.29	5.66
2005-06	5.76	5.60	5.58	6.01	6.06	5.83	5.76	5.69	5.83	5.80	5.85	5.53	5.78
2006-07	5.40	5.63	6.13	6.38	6.44	6.95	7.17	7.13	7.36	7.83	7.97	8.03	6.53
2007-08	8.49	8.81	9.65	10.30	10.10	12.30	11.70	12.30	12.80	14.50	14.50	13.50	10.20
2008-09	11.00	9.78	9.47	9.70	10.30	9.88	9.49	10.10	11.10	11.90	11.10	11.00	10.20
2009-10	9.97	9.49	9.63	10.20	10.00	9.82	9.70	9.79	9.77	9.79	10.10	10.50	9.80
2010-11	**10.10**	**10.60**	**11.50**	**12.30**	**11.80**	**12.90**	**12.70**	**13.30**	**13.70**	**13.40**	**13.70**	**13.40**	**11.80**

Year	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Marketing Year Avg.
						Wheat (Dollars per Bushel)							
2004-05	3.37	3.28	3.01	3.09	2.90	2.85	3.06	3.24	2.98	3.25	2.97	3.08	3.24
2005-06	3.16	3.18	2.92	2.88	3.03	3.02	3.04	3.21	3.34	3.29	2.98	3.43	3.15
2006-07	3.34	3.18	2.95	3.31	3.56	4.38	4.46	4.08	4.16	4.05	4.07	4.54	3.41
2007-08	4.90	5.10	5.70	7.09	8.02	5.52	7.58	7.56	9.05	9.56	10.70	6.36	5.20
2008-09	6.18	6.32	6.43	5.10	4.14	3.82	4.93	5.46	5.23	5.79	4.52	5.10	5.91
2009-10	4.47	4.33	3.91	3.35	3.77	3.79	4.24	4.22	4.30	4.17	4.27	4.99	4.27
2010-11	**4.49**	**5.06**	**5.88**	**6.31**	**5.17**	**5.81**	**6.14**	**6.83**	**7.78**	**7.58**	**7.71**	**7.55**	**5.12**

1/ Weighted monthly average for market year. 2009 and 2010 are preliminary.
2/ Data not available.

January 2005 Purdue Crop Cost & Return Guide

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]																	
	Low Productivity Soil						Average Productivity Soil						High Productivity Soil					
	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans
Expected yield per acre[2]	104.0	115.5	37.1	33.4	61.5	21.0	128.7	143.0	46.0	41.4	68.6	25.7	158.3	175.9	56.6	50.9	75.8	31.7
Harvest price[3]	$2.12	$2.12	$5.23	$5.23	$2.88	$5.23	$2.12	$2.12	$5.23	$5.23	$2.88	$5.23	$2.12	$2.12	$5.23	$5.23	$2.88	$5.23
Market Revenue	$220	$245	$194	$175	$177	$110	$273	$303	$241	$217	$198	$134	$336	$373	$296	$266	$218	$166
Loan Deficiency Payment (LDP)[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total revenue	$220	$245	$194	$175	$177	$110	$273	$303	$241	$217	$198	$134	$336	$373	$296	$266	$218	$166
Less variable costs[5]																		
Fertilizer[6]	$53	$51	$22	$20	$44	$14	$67	$66	$26	$24	$50	$16	$83	$84	$31	$29	$57	$19
Seed[7]	29	29	36	36	21	42	34	34	36	36	21	42	34	34	36	36	21	42
Chemicals[8]	34	16	14	14	N/A	11	36	19	14	14	N/A	11	41	23	14	14	N/A	11
Dryer Fuel & Handling	16	14	1	1	N/A	3	20	17	1	1	N/A	3	24	21	1	1	N/A	3
Machinery Fuel @ $1.55	11	11	11	11	6	5	12	12	12	12	6	5	14	14	14	14	6	5
Machinery Repairs[9]	9	9	9	9	4	4	10	10	10	10	5	4	11	11	11	11	5	4
Hauling	6	7	2	2	4	1	8	9	3	2	4	2	10	11	3	3	5	2
Interest[10]	6	5	4	4	3	4	7	6	4	4	4	4	8	7	5	4	4	4
Insurance/misc.	11	11	8	8	7	4	11	11	8	8	8	4	11	11	8	8	8	4
Total variable cost	$175	$153	$107	$105	$89	$88	$205	$184	$114	$111	$98	$91	$236	$216	$123	$120	$106	$94
Contribution margin[11] (Revenue - variable costs)	$45	$92	$87	$70	$88	$22	$68	$119	$127	$106	$100	$43	$100	$157	$173	$146	$112	$72

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. On each soil, these estimated yields may vary ± 10% for management, and ± 10% for plant/harvest date. These yields assume average weather conditions.

[2]Average yield based on timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 90%; drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%); wheat 53% on low yield, 48% on average yield, and 43% on high yield soils; and double crop soybeans (South-central Indiana) 18% (Source:ID-152 "Estimating Potential Yield for Corn, Soybeans, and Wheat").

[3]Harvest corn price is December 2005 CBOT futures price less $0.25 basis. Harvest soybean price is November 2005 CBOT futures price less $0.30 basis. Harvest wheat price is July 2005 CBOT futures price less $0.30 basis.

[4]Loan Deficiency Payment is paid on all bushels produced. The per bushel payment is the amount by which the loan rate exceeds the market price. Loan rates are $2.01 for corn, $5.12 for soybeans, and $2.49 for wheat.

[5]Seed, fertilizer, chemical, and fuel prices are early January 2005 quotes.

[6]Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P_2O_5-K_2O-lime by crop and soil: continuous corn, 115-39-48-346, 149-48-55-447, 189-59-63-568; rotation corn, 101-43-51-303, 139-53-59-415, 183-65-68-550; rotation beans, 0-30-72-0, 0-37-84-0, 0-46-101-0; wheat, 58-39-43-180, 73-43-45-218, 85-48-48-256; double crop beans, 0-17-49-0, 0-21-57-0, 0-26-65-0. Fertilizer prices per lb.: NH3 @ $0.26, urea @ $0.38; P205 @ $0.30; K20 @ $0.18; lime @ $16/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC.

[7]Add $7 per acre for Bt corn seed. Soybean seed prices include Round-Up Ready® varieties

[8]Corn insecticide @$17.80 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

[9]Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be $6-10 higher, and indirect machinery costs will be lower.

[10]Interest is based on 6.5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

[11]Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

January 2005 Purdue Crop Cost & Return Guide

Table 2. Estimated per Farm Crop Budgets for Low, Average, and High Productivity Indiana Soils

Effect on Earnings for Each of Four Crop Rotations on Three Soil Types Using Similar Machinery and Labor When Farm Size Is Adjusted to Permit Timely Fieldwork[1]

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	1200	1200	900	1000	1200	1200	900	1000	1200	1200
Rotation	c-c	c-b	c-b, c-w	c-b, c-w, dc	c-c	c-b	c-b, c-w	c-b, c-w, dc	c-c	c-b	c-b, c-w	c-b, c-w, c
Crop contribution margin[2]	$40,500	$89,500	$107,600	$112,000	$61,200	$123,000	$142,200	$150,800	$90,000	$165,000	$185,800	$200,200
Government payment[3]	30,168	22,690	32,450	32,450	35,919	26,875	38,016	38,016	44,325	33,190	45,852	45,852
Total contribution margin	$70,668	$112,190	$140,050	$144,450	$97,119	$149,875	$180,216	$188,816	$134,325	$198,190	$231,652	$246,052
Annual overhead costs:												
Machinery replacement[4]	45,000	48,500	48,500	49,000	48,600	52,100	52,100	52,600	54,000	57,500	57,500	58,000
Drying/handling	6,300	6,300	6,300	6,300	7,200	7,200	7,200	7,200	8,100	8,100	8,100	8,100
Family and hired labor[5]	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000
Land[6]	$94,500	$105,000	$126,000	$126,000	$116,100	$129,000	$154,800	$154,800	$113,400	$160,000	$192,000	$192,000
Earnings or (losses)	-$114,132	-$86,610	-$79,750	-$75,850	-$113,781	-$77,425	-$72,884	-$64,784	-$80,175	-$66,410	-$64,948	-$51,048

[1]Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 acres rotation corn - 500 acres soybeans; c-b, c-w = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat; c-b, c-w, dc = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat, double crop beans (dc).

[2]Crops contribution margin is per acre contribution margin from Table 1 times number of acres.

[3]Government payment includes the direct payment and the counter cyclical payment. The per bushel direct payment rate is $0.28 for corn, $0.44 for soybeans, and $0.52 for wheat. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Direct payment yields for wheat were 45.8, 49.3, 55.5 on low, average, and high soils. The counter cyclical payments were based on a target price of $2.63 for corn, $5.80 for soybeans, and $3.92 for wheat. The average marketing year price assumed was $2.23 for corn, $5.66 for soybeans, and $3.08 for wheat. The counter cyclical yields for corn were 108.1, 133.4, and 164.1 for low, average, and high soils. The counter cyclical yields for soybeans were 36.2, 44.7, and 55.0 for low, average and high soils. The counter cyclical yields for wheat were 59.5, 66.7, 73.8 for low, average, and high soils. A base acre of each acre of crop raised was assumed.

[4]The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans, and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower.

[5]Labor expenses include a family living withdrawal of $26,989 ($52,908 of family living expenses less $25,919 in net nonfarm income. Values are reported in *Farm Income & Production Costs for 2003*, University of Illinois Extension, AE-4566, April 2004) and $12,000 for part-time hired labor.

[6]Based on cash rent at $105 per acre on low yield soil, $129 per acre on average yield soil, and $160 per acre on high yield soil.

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2006 Purdue Crop Cost & Return Guide

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]																	
	Low Productivity Soil						Average Productivity Soil						High Productivity Soil					
	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Second-Year Beans	Wheat	DC Beans
Expected yield per acre[2]	107.0	118.9	37.3	33.5	59.0	21.0	132.4	147.1	46.2	41.6	65.8	25.7	162.8	180.9	56.8	51.2	72.7	31.7
Harvest price[3]	$2.31	$2.31	$5.84	$5.84	$3.48	$5.84	$2.31	$2.31	$5.84	$5.84	$3.48	$5.84	$2.31	$2.31	$5.84	$5.84	$3.48	$5.84
Market Revenue	$247	$275	$218	$196	$205	$123	$306	$340	$270	$243	$229	$150	$376	$418	$332	$299	$253	$185
Loan Deficiency Payment (LDP)[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total revenue	$247	$275	$218	$196	$205	$123	$306	$340	$270	$243	$229	$150	$376	$418	$332	$299	$253	$185
Less variable costs[5]																		
Fertilizer[6]	$69	$66	$27	$24	$47	$17	$87	$86	$32	$29	$55	$20	$108	$109	$38	$35	$62	$23
Seed[7]	30	30	37	37	25	43	35	35	37	37	25	43	35	35	37	37	25	43
Chemicals[8]	36	17	12	12	N/A	10	39	20	12	12	N/A	10	44	25	12	12	N/A	10
Dryer Fuel & Handling	24	20	1	1	N/A	3	30	25	1	1	N/A	4	36	31	1	1	N/A	4
Machinery Fuel @ $2.15	15	15	15	15	9	6	17	17	17	17	9	6	19	19	19	19	9	6
Machinery Repairs[9]	9	9	9	9	4	4	10	10	10	10	6	4	11	11	11	11	6	4
Hauling	6	7	2	2	4	1	8	9	3	3	4	2	10	11	3	3	4	2
Interest[10]	9	7	5	5	5	4	10	9	5	5	5	5	12	11	6	6	5	5
Insurance/misc.	11	11	8	8	7	4	11	11	8	8	8	4	11	11	8	8	8	4
Total variable cost	$209	$182	$116	$113	$101	$92	$247	$222	$125	$122	$112	$98	$286	$263	$135	$132	$119	$101
Contribution margin[11] (Revenue - variable costs)	$38	$93	$102	$83	$104	$31	$59	$118	$145	$121	$117	$52	$90	$155	$197	$167	$134	$84

[1] Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. On each soil, these estimated yields may vary ± 10% for management and ± 10% for plant/harvest date. These yields assume average weather conditions.

[2] Average yield based on timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 90%; drill soybeans 33.5% (second year drill beans or for 30-inch beans in central Indiana 30.2%); wheat 53% on low yield, 48% on average yield, and 43% on high yield soils; and double crop soybeans (South-central Indiana) 18% (Source:ID-152 "Estimating Potential Yield for Corn, Soybeans, and Wheat").

[3] Harvest corn price is December 2006 CBOT futures price less $0.25 basis. Harvest soybean price is November 2006 CBOT futures price less $0.30 basis. Harvest wheat price is July 2006 CBOT futures price less $0.30 basis.

[4] Loan Deficiency Payment is paid on all bushels produced. The per bushel payment is the amount by which the loan rate exceeds the market price. Loan rates are $2.01 for corn, $5.12 for soybeans, and $2.49 for wheat.

[5] Seed, fertilizer, chemical, and fuel prices are early February 2006 quotes.

[6] Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P_2O_5-K_2O-lime by crop and soil: continuous corn, 120-39-49-359, 154-49-56-462, 195-60-64-584; rotation corn, 106-44-52-317, 144-54-60-432, 189-67-69-567; rotation beans, 0-30-72-0, 0-37-85-0, 0-46-100-0; wheat, 56-37-42-167, 68-42-44-203, 80-46-47-239; double crop beans, 0-17-49-0, 0-21-56-0, 0-25-64-0. Fertilizer prices per lb.: NH3 @ $0.34; urea @ $0.42; P205 @ $0.36; K20 @ $0.22; lime @ $18/ton. 5-10% more nitrogen might be needed on both excessively and poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range. The potash recommendations are for a light color loam or silt loam soil with a Cation Exchange Capacity (CEC) of 10. This recommendation will vary with CEC.

[7] Add $7 per acre for Bt corn seed. Soybean seed prices include Round-Up Ready® varieties.

[8] Corn rootworm insecticide @$18.90 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

[9] Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be $6-10 higher, and indirect machinery costs will be lower.

[10] Interest is based on 7.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

[11] Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

2006 Purdue Crop Cost & Return Guide

Table 2. Estimated per Farm Crop Budgets for Low, Average, and High Productivity Indiana Soils

Effect on Earnings for Each of Four Crop Rotations on Three Soil Types Using Similar Machinery and Labor When Farm Size Is Adjusted to Permit Timely Fieldwork[1]

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	1200	1200	900	1000	1200	1200	900	1000	1200	1200
Rotation	c-c	c-b	c-b, c-w	c-b, c-w, dc	c-c	c-b	c-b, c-w	c-b, c-w, dc	c-c	c-b	c-b, c-w	c-b, c-w, dc
Crop contribution margin[2]	$34,200	$97,500	$117,400	$123,600	$53,100	$131,500	$152,200	$162,600	$81,000	$176,000	$198,600	$215,400
Government payment[3]	20,241	17,175	22,596	22,596	23,670	20,070	26,222	26,222	29,259	24,820	31,794	31,794
Total contribution margin	$54,441	$114,675	$139,996	$146,196	$76,770	$151,570	$178,422	$188,822	$110,259	$200,820	$230,394	$247,194
Annual overhead costs:												
Machinery replacement[4]	45,000	48,500	48,500	49,000	48,600	52,100	52,100	52,600	54,000	57,500	57,500	58,000
Drying/handling	6,300	6,300	6,300	6,300	7,200	7,200	7,200	7,200	8,100	8,100	8,100	8,100
Family and hired labor[5]	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000
Land[6]	$97,200	$108,000	$129,600	$129,600	$120,600	$134,000	$160,800	$160,800	$148,500	$165,000	$198,000	$198,000
Earnings or (losses)	-$133,059	-$87,125	-$83,404	-$77,704	-$138,630	-$80,730	-$80,678	-$70,778	-$139,341	-$68,780	-$72,206	-$55,906

[1]Rotations are as follows: c-c = 900 acres continuous corn; c-b = 500 acres rotation corn - 500 acres soybeans, c-b, c-w = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat; c-b, c-w, dc = 400 acres corn - 400 acres soybeans plus 200 acres corn - 200 acres wheat, double crop beans (dc).

[2]Crop's contribution margin is per acre contribution margin from Table 1 times number of acres.

[3]Government payment includes the direct payment and the counter cyclical payment. The per bushel direct payment rate is $0.28 for corn, $0.44 for soybeans, and $0.52 for wheat. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Direct payment yields for wheat were 45.8, 49.3, 55.5 on low, average, and high soils. The counter cyclical payments were based on a target price of $2.63 for corn, $5.80 for soybeans, and $3.92 for wheat. The average marketing year price assumed was $2.43 for corn, $6.07 for soybeans, and $3.72 for wheat. The counter cyclical yields for corn were 108.1, 133.4, and 164.1 for low, average, and high soils. The counter cyclical yields for soybeans were 36.2, 44.7, and 55.0 for low, average and high soils. The counter cyclical yields for wheat were 59.5, 66.7, 73.8 for low, average, and high soils. A base acre for each acre of crop raised was assumed.

[4]The same basic machinery set, which is timely for each rotation, is used on all four farms of the same soil type. A no-till drill is added for beans, and a larger combine platform is added for double-crop beans. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for timely set of fall plow or chisel tillage. Replacement costs for no-till are about 75% of fall chisel tillage. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower.

[5]Labor expenses include a family living withdrawal of $26,989 ($52,908 of family living expenses less $25,919 in net nonfarm income. Values are reported in *Farm Income & Production Costs for 2003*, University of Illinois Extension, AE-4566, April 2004), and the balance is used for part-time hired labor.

[6]Based on cash rent at $108 per acre on low-yield soil, $134 per acre on average-yield soil, and $165 per acre on high-yield soil.

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2007 Purdue Crop Cost & Return Guide

(The numbers in this publication are best considered as general guidelines when beginning the process of generating one's own specific crop budgets for 2007.)

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield per acre[2]	118.9	126.5	39.6	56.4	23.4	147.1	156.5	49.0	69.8	28.9	181.0	192.5	60.3	85.9	35.6
Harvest price[3]	$3.71	$3.71	$7.65	$4.05	$7.65	$3.71	$3.71	$7.65	$4.05	$7.65	$3.71	$3.71	$7.65	$4.05	$7.65
Market Revenue	$441	$469	$303	$228	$179	$546	$581	$375	$283	$221	$671	$714	$461	$348	$272
Less variable costs[4]															
Fertilizer[5]	$68	$63	$28	$44	$18	$85	$79	$34	$58	$21	$106	$98	$40	$75	$25
Seed[6]	39	39	39	26	45	43	43	39	26	45	45	45	39	26	45
Chemicals[7]	49	30	12	N/A	10	49	30	12	N/A	10	49	30	12	N/A	10
Dryer Fuel	22	18	N/A	N/A	3	27	22	N/A	N/A	3	34	27	N/A	N/A	4
Machinery Fuel @ $2.20	16	16	7	10	7	16	16	7	10	7	16	16	7	10	7
Machinery Repairs[8]	10	10	6	10	9	10	10	6	10	9	10	10	6	10	9
Hauling[9]	10	11	3	5	2	12	13	4	6	2	15	16	5	7	3
Interest[10]	11	9	6	5	5	12	11	6	6	6	14	12	6	7	6
Insurance/misc.	15	15	12	3	4	15	15	12	3	4	16	16	12	3	4
Total variable cost	$240	$211	$113	$103	$103	$269	$239	$120	$119	$107	$305	$270	$127	$138	$113
Contribution margin[11] (Revenue - variable costs)	$201	$258	$190	$125	$76	$277	$342	$255	$164	$114	$366	$444	$334	$210	$159

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity soils. Historically, the high yield has been based on Brookston soil, which is one of the most productive soils in Indiana. The high-rotation corn yield shown here is likely 5 to 10 bushels per acre higher than one would expect on average for the top one-third of corn yields in Indiana.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94% assumes a chisel plow tillage system; drill soybeans 31.3%, and wheat 49.2% on low productivity soil and 44.6% on average and high productivity soils. Double crop soybeans (South-central Indiana) are 59% of rotation soybeans.

[3]Harvest corn price is December 2007 CBOT futures price less $0.25 basis. Harvest soybean price is November 2007 CBOT futures price less $0.30 basis. Harvest wheat price is July 2007 CBOT futures price less $0.75 basis. The prices shown here were estimated using closing prices on February 8, 2007. These prices will change.

[4]Seed, fertilizer, chemical, and fuel prices are based on January 2007 quotes.

[5]Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P_2O_5-K_2O-lime by crop and soil: continuous corn, 130-44-52-391, 169-54-60-506, 215-67-69-644; rotation corn, 111-47-54-332, 143-58-62-430, 180-71-72-540; rotation beans, 0-32-75-0, 0-39-89-0, 0-48-104-0; wheat, 51-36-41-154, 75-44-46-224, 102-54-52-308; double crop beans, 0-19-53-0, 0-23-61-0, 0-29-70-0. Fertilizer prices per lb.: NH_3 @ $0.28; urea @ $0.40; P_2O_5 @ $0.38; K_2O @ $0.21; lime @ $18/ton. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

[6]Corn assumes non-GMO seed. Depending on variety and seeding rate, GMO corn would add $15 or more per acre. Soybean seed prices include Round-Up Ready® varieties.

[7]Corn rootworm insecticide @$18.90 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

[8]Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher and indirect machinery costs will be lower.

[9]Hauling charge represents moving grain from field to storage. Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, FBM 0203, July 2006.

[10]Interest is based on 8.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

[11]Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

2007 Purdue Crop Cost & Return Guide

(The numbers in this publication are best considered as general guidelines when beginning the process of generating one's own specific crop budgets for 2007.)

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil		Average Productivity Soil		High Productivity Soil	
Farm Acres	2700	3000	2700	3000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$201	$224	$277	$299	$366	$389
Government payment[3]	$17	$17	$20	$20	$25	$25
Total contribution margin	$218	$241	$297	$319	$391	$414
Annual overhead costs:						
Machinery replacement[4]	$43	$43	$43	$43	$43	$43
Drying/handling	$14	$9	$14	$9	$14	$9
Family and hired labor[5]	$34	$30	$34	$30	$34	$30
Land[6]	$115	$115	$142	$142	$175	$175
Earnings or (losses)	$13	$44	$65	$95	$126	$157

[1]Rotations are as follows: c-c = 2,700 acres continuous corn; c-b = 1,500 acres rotation corn - 1,500 acres soybeans.

[2]Crop's contribution margin is per acre contribution margin from Table 1 times number of acres.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used. Corn production utilizes a chisel plow tillage system and soybeans utilize no-till. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower.

[5]Labor expenses include a family living withdrawal of $40,826 ($58,285 of family living expenses less $27,810 in net nonfarm income plus $10,351 in income and self-employment taxes. Values are reported in *Farm Income & Production Costs for 2005*, University of Illinois Extension, AE-4566, April 2006). A full-time employee with total compensation of $35,800. Employee compensation based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006. The balance is used for part-time hired labor.

[6]Based on cash rent per bushel reported in Indiana Farmland Values Continue to Increase, *Purdue Agricultural Economics Report*, August, 2006. Cash rent for low-yield soil estimated to be $115 per acre, average-yield soil estimated to be $142 per acre, and high-yield soil estimated to be $175 per acre. The sharp rise in crop prices since the time of the survey may result in a wide variation in cash rents and thus the estimated land charge.

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2008 Purdue Crop Cost & Return Guide

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The numbers in this publication are best considered general guidelines for beginning the process of generating one's own specific crop budgets.

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield per acre[2]	118	125	39	62	23	147	157	49	70	29	177	188	59	84	35
Harvest price[3]	$5.00	$5.00	$12.40	$8.30	$12.40	$5.00	$5.00	$12.40	$8.30	$12.40	$5.00	$5.00	$12.40	$8.30	$12.40
Market revenue	$590	$625	$484	$515	$285	$735	$785	$608	$581	$360	$885	$940	$732	$697	$434
Less variable costs[4]															
Fertilizer[5]	$142	$130	$50	$81	$33	$152	$141	$61	$95	$39	$162	$151	$71	$119	$45
Seed[6]	67	67	48	36	54	79	79	48	36	54	79	79	48	36	54
Pesticides[7]	39	39	19	7	17	39	39	19	7	17	39	39	19	7	17
Dryer fuel[8]	28	23	N/A	N/A	3	35	28	N/A	N/A	3	42	34	N/A	N/A	4
Machinery fuel @ $3.25	24	24	11	15	10	24	24	11	15	10	24	24	11	15	10
Machinery repairs[9]	11	11	8	8	8	11	11	8	8	8	11	11	8	8	8
Hauling[10]	10	11	3	5	2	12	13	4	6	2	15	16	5	7	3
Interest[11]	17	16	8	8	7	19	18	9	9	8	11	8	10	11	8
Insurance/misc.[12]	26	26	22	3	4	27	27	22	3	4	28	28	23	3	4
Total variable cost	$364	$347	$169	$163	$138	$398	$380	$182	$179	$145	$411	$390	$195	$206	$153
Contribution margin[13] (Revenue - variable costs) per acre	$226	$278	$315	$352	$147	$337	$405	$426	$402	$215	$474	$550	$537	$491	$281

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31.3%; wheat 49.2% on low productivity soil and 44.6% on average and high productivity soils; and double-crop soybeans 18.5%. Continuous corn yields assume chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana.

[3]Harvest corn price is December 2008 CBOT futures price less $0.40 basis. Harvest soybean price is November 2008 CBOT futures price less $0.75 basis. Harvest wheat price is July 2008 CBOT futures price less $1.10 basis. The prices shown here were estimated using closing prices on February 18, 2008. These prices will change.

[4]Seed, fertilizer, chemical, and fuel prices are based on projections for 2008.

Table 1 (Continued)

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N-P_2O_5-K_2O-lime by crop and soil: continuous corn, 190-44-52-570, 190-54-60-570, 190-65-68-570; rotation corn, 160-46-54-480, 160-58-62-480, 160-69-71-480; rotation beans, 0-31-75-0, 0-39-89-0, 0-47-102-0; wheat, 60-39-43-181, 75-44-46-224, 99-53-51-298; double crop beans, 0-19-53-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.46; urea @ $0.63; P_2O_5 @ $0.62; K_2O @ $0.41; lime @ $18/ton. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

[6] Corn seed prices assume a triple-stacked biotech variety (Bt-RW, Bt-CB, & RR traits). A 20% refuge is planted with varieties that do not contain insect resistant traits. According to the USDA's Agricultural Prices report for April 2007, biotech corn seed prices averaged 154% of non-biotech corn seed. This price differential is expected to increase in 2008. Seeding rates for corn are 28,000 seeds per acre on low productivity soils and 33,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 180,000 seeds per acre. Double-crop soybeans are drilled with a seeding rate of 208,000 seeds per acre.

[7] Includes both insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. Herbicide costs can vary widely based on both the herbicides selected and the required rate of application.

[8] Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9] Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10] Hauling charge represents moving grain from field to storage. Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, FBM 0203, July 2006.

[11] Interest is based on 8.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12] The cost of crop insurance represents the premium for CRC insurance at the 75% level. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13] Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$226	$297	$226	$297	$337	$416	$337	$416	$474	$544	$474	$544
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$243	$314	$243	$314	$357	$436	$357	$436	$499	$569	$499	$569
Annual overhead costs:												
Machinery replacement[4]	$64	$58	$48	$43	$64	$58	$51	$46	$70	$63	$52	$47
Drying/handling	$14	$9	$14	$9	$14	$9	$14	$9	$14	$9	$14	$9
Family and hired labor[5]	$60	$52	$33	$29	$60	$52	$33	$29	$60	$52	$33	$29
Land[6]	$124	$124	$124	$124	$155	$155	$155	$155	$186	$186	$186	$186
Earnings or (losses)	-$19	$71	$25	$109	$64	$162	$104	$196	$169	$258	$214	$297

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2007. These payment rates could be changed in the new Farm Bill. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $40,323 ($59,686 of family living expenses less $29,614 in net nonfarm income plus $10,251 in income and self-employment taxes) and a full-time employee with total compensation of $35,800. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2006, University of Illinois Extension, AE-4566, April 2007. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent Jump Upward, *Purdue Agricultural Economics Report*, August, 2007.

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Date: 2/08

2009 Purdue Crop Cost & Return Guide

January 2009 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield per acre[2]	118	126	39	62	23	149	158	49	70	29	179	190	59	84	35
Harvest price[3]	$4.00	$4.00	$8.70	$5.20	$8.70	$4.00	$4.00	$8.70	$5.20	$8.70	$4.00	$4.00	$8.70	$5.20	$8.70
Market revenue	$472	$504	$339	$322	$200	$596	$632	$426	$364	$252	$716	$760	$513	$437	$305
Less variable costs[4]															
Fertilizer[5]	$178	$166	$74	$91	$49	$192	$180	$89	$104	$58	$205	$194	$104	$128	$67
Seed[6]	75	75	52	43	60	89	89	52	43	60	89	89	52	43	60
Pesticides[7]	41	41	29	8	26	41	41	29	8	26	41	41	29	8	26
Dryer fuel[8]	24	19	N/A	N/A	4	30	24	N/A	N/A	5	37	29	N/A	N/A	6
Machinery fuel @ $2.40	18	18	8	11	8	18	18	8	11	8	18	18	8	11	8
Machinery repairs[9]	12	12	9	9	9	12	12	9	9	9	12	12	9	9	9
Hauling[10]	13	14	4	7	3	16	17	5	8	3	20	21	6	9	4
Interest[11]	16	16	9	7	8	18	17	9	8	8	9	9	10	9	9
Insurance/misc.[12]	26	26	22	3	4	27	27	22	3	4	28	28	23	3	4
Total variable cost	$403	$387	$207	$179	$171	$443	$425	$223	$194	$181	$459	$441	$241	$220	$193
Contribution margin[13] (Revenue - variable costs) per acre	$69	$117	$132	$143	$29	$153	$207	$203	$170	$71	$257	$319	$272	$217	$112

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31%; wheat 49% on low productivity soil and 44% on average and high productivity soils; and double-crop soybeans 18%. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana.

[3]Harvest corn price is December 2009 Chicago Board of Trade (CBOT) futures price less $0.35 basis. Harvest soybean price is November 2009 CBOT futures price less $0.60 basis. Harvest wheat price is July 2009 CBOT futures price less $1.00 basis. The prices shown were estimated using closing prices on January 28, 2009. These prices will change.

[4]Seed, fertilizer, pesticide, and fuel prices are based on projections for 2009.

Table 1 (Continued)

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_2O_5, K_2O, and lime by crop and soil were as follows: continuous corn, 190-44-52-570, 190-55-60-570, 190-66-68-570; rotation corn, 160-47-54-480, 160-58-63-480, 160-70-71-480; rotation beans, 0-31-75-0, 0-39-89-0, 0-47-103-0; wheat, 61-39-43-183, 75-44-46-225, 99-53-51-299; double crop beans, 0-18-52-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.49; urea @ $0.53; P_2O_5 @ $0.66; K_2O @ $0.71; lime @ $24/ton spread on the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range.

[6] Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits. According to the USDA's Agricultural Prices report for April 2008, biotech corn seed prices averaged 60% more than non-biotech corn seed, which was up from 54% more a year earlier. Seeding rates for corn are 28,000 seeds per acre on low productivity soils and 33,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre.

[7] Includes both insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. Herbicide costs can vary widely based on both the herbicides selected and the required rate of application.

[8] Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9] Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10] Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, May 2008.)

[11] Interest is based on 7% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12] The cost of crop insurance represents the premium for a Crop Revenue Coverage (CRC) policy at the 75% level. Since rates for the 2009 crop year are not available, estimates were based on rates in 2008. These rates are based on a base price of $5.25 per bushel for corn and $12.75 per bushel for soybeans. Rates will change based on the price guarantees and other parameters selected for the 2009 crop year. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13] Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$69	$125	$69	$125	$153	$205	$153	$205	$257	$296	$257	$296
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$86	$142	$86	$142	$173	$225	$173	$225	$282	$321	$282	$321
Annual overhead costs:												
Machinery replacement[4]	$74	$66	$55	$49	$74	$66	$59	$53	$81	$73	$60	$54
Drying/handling	$16	$11	$16	$11	$16	$11	$16	$11	$16	$11	$16	$11
Family and hired labor[5]	$60	$52	$36	$32	$60	$52	$36	$32	$60	$52	$36	$32
Land[6]	$135	$135	$135	$135	$169	$169	$169	$169	$203	$203	$203	$203
Earnings or (losses)	-$198	-$122	-$155	-$85	-$145	-$73	-$107	-$39	-$78	-$18	-$33	$21

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2009. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. It is assumed that the producer does not elect to enroll in the ACRE program. Direct payment rates are reduced 20% for producers who enroll in ACRE. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $45,708 ($66,412 of family living expenses less $31,668 in net nonfarm income plus $10,964 in income and self-employment taxes) and a full-time employee with total compensation of $38,200. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2007, University of Illinois Extension, AE-4566, April 2008. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent Continue Sharp Upward Climb, *Purdue Agricultural Economics Report*, August, 2008.

Prepared by: W. Alan Miller, Craig L. Dobbins, and Bruce Erickson, Department of Agricultural Economics, Bob Nielsen and Tony J. Vyn, Department of Agronomy, and Bill Johnson, Department of Botany and Plant Pathology, Purdue University.

Date: 1/09

2010 Purdue Crop Cost & Return Guide

January 2010 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans	Cont. Corn	Rot. Corn	Rot. Beans	Wheat	DC Beans
Expected yield per acre[2]	119	127	39	62	23	149	159	49	70	29	180	191	59	84	35
Harvest price[3]	$4.20	$4.20	$9.60	$4.90	$9.60	$4.20	$4.20	$9.60	$4.90	$9.60	$4.20	$4.20	$9.60	$4.90	$9.60
Market revenue	$500	$533	$374	$304	$221	$626	$668	$470	$343	$278	$756	$802	$566	$412	$336
Less variable costs[4]															
Fertilizer[5]	$103	$96	$44	$63	$30	$111	$104	$53	$73	$35	$119	$112	$63	$90	$41
Seed[6]	78	78	52	34	60	94	94	52	34	60	94	94	52	34	60
Pesticides[7]	37	37	29	7	26	37	37	29	7	26	37	37	29	7	26
Dryer fuel[8]	24	19	N/A	N/A	4	30	24	N/A	N/A	4	37	29	N/A	N/A	5
Machinery fuel @ $2.70	20	20	9	12	9	20	20	9	12	9	20	20	9	12	9
Machinery repairs[9]	14	14	10	10	10	14	14	10	10	10	14	14	10	10	10
Hauling[10]	11	11	4	6	2	13	14	4	6	3	16	17	5	8	3
Interest[11]	9	8	5	4	5	10	9	5	4	5	5	5	6	5	5
Insurance/misc.[12]	26	26	21	3	4	26	26	21	3	4	28	28	21	3	4
Total variable cost	$322	$309	$174	$139	$150	$355	$342	$183	$149	$156	$370	$356	$195	$169	$163
Contribution margin[13] (Revenue - variable costs) per acre	$178	$224	$200	$165	$71	$271	$326	$287	$194	$122	$386	$446	$371	$243	$173

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31%; wheat 49% on low productivity soil, 44% on average and high productivity soils; and double-crop soybeans 18%. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana. Rotation corn yields for average soils are based on the twenty-year trend in state average yields reported by the Indiana office of the National Agricultural Statistics Service.

[3]Harvest corn price is December 2010 CME Group futures price less $0.30 basis. Harvest soybean price is November 2010 CME Group futures price less $0.40 basis. Harvest wheat price is July 2010 CME Group futures price less $1.00 basis. The prices shown were estimated using closing prices on January 8, 2010. These prices will change.

Table 1 (Continued)

[4]Input prices for variable costs reflect expected prices for 2010. These prices will vary by location and time of the year. Users need to adjust these prices to reflect their own expectations and price situation.

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_2O_5, K_2O, and lime by crop and soil were as follows: continuous corn, 190-44-52-570, 190-55-60-570, 190-67-69-570; rotation corn, 160-47-54-480, 160-59-63-480, 160-71-72-480; rotation beans, 0-31-75-0, 0-39-88-0, 0-47-103-0; wheat, 61-39 43-183, 75-44-46-225, 100-53-51-299; double crop beans, 0-18-52-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.30; urea @ $0.45; P_2O_5 @ $0.39; K_2O @ $0.43; lime @ $18/ton spread o the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range.

[6]Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits, but do include herbicide tolerance. According to the USDA's Agricultural Prices report for April 2009, biotech corn seed prices averaged 69% more than non-biotech corn seed, which was up from 60% more a year earlier. Seeding rates for corn are 29,000 seeds per acre on low productivity soils and 35,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre. The seeding rate for wheat is two bushels per acre.

[7]Includes insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. These costs do not include the application of fungicide to corn. If fungicide is applied, this will add an additional $28 to $32 per acre for material and application. Pesticide costs can vary widely based on herbicides selected, required rate of application, and product pricing.

[8]Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9]Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10]Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, May 2008.)

[11]Interest is based on 5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12]The cost of crop insurance represents the premium for a Crop Revenue Coverage (CRC) policy at the 75% level. Since rates for the 2010 crop year are not available, estimates were based on rates in 2009. These revenue insurance rates contain a base price of $4.04 per bushel for corn and $8.80 per bushel for soybeans. Per acre rates will change based on the price guarantees, volatility parameters, and level of protection selected for the 2010 crop year. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13]Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$178	$212	$178	$212	$271	$307	$271	$307	$386	$409	$386	$409
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$195	$229	$195	$229	$291	$327	$291	$327	$411	$434	$411	$434
Annual overhead costs:												
Machinery replacement[4]	$85	$77	$63	$57	$85	$77	$68	$61	$94	$84	$70	$63
Drying/handling	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12
Family and hired labor[5]	$60	$52	$43	$38	$60	$52	$43	$38	$60	$52	$43	$38
Land[6]	$131	$131	$131	$131	$167	$167	$167	$167	$208	$208	$208	$208
Earnings or (losses)	-$99	-$43	-$59	-$8	-$38	$19	-$4	$50	$32	$77	$74	$114

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment with no participation in ACRE. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2010. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here. If a producer participates in the ACRE program, direct payment rates are reduced 20%. The decision about participating in the ACRE program will likely need to be made by June 1, 2010. An advantage of participating in ACRE is the possibility of receiving a more stable revenue for corn, soybeans, and wheat if crop prices decline. As grain prices decline, both the possibility of a payment and the size of the payment increases. Producers will need to review their revenue estimates for the state and their farms as the ACRE signup deadline approaches. Tools that can be used to estimate the potential payments from ACRE can be found at http://www.ag.purdue.edu/agecon/Pages/agpolicy.aspx.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $57,543 ($72,686 of family living expenses less $30,913 in net nonfarm income plus $15,770 in income and self-employment taxes) and a full-time employee with total compensation of $41,314. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2009, University of Illinois Extension, AE-4566, April 2008. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on 2009 cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent: Relative Calm in a Turbulent Economy, Purdue Agricultural Economics Report, August, 2009.

Prepared by: W. Alan Miller, Craig L. Dobbins, and Bruce Erickson, Department of Agricultural Economics, Bob Nielsen and Tony J. Vyn, Department of Agronomy, and Bill Johnson and Kiersten Wise, Department of Botany and Plant Pathology, Purdue University.

Date: 1/2010

Calculation of Average Government Payments per Acre

		2005		2006		2007		2008		2009		2010
Total Government Payment	(1)	917,903,000	(2)	541,285,000	(2)	302,505,000	(2)	321,887,000	(2)	304,337,000	(2)	372,540,000
Less Milk Income Loss Pymt	(1)	-277,000	(2)	-6,538,000	(2)	-1,200,000	(2)	-4,000	(2)	-13,784,000	(2)	-781,000
Net Government Payment		917,626,000		534,747,000		301,305,000		321,883,000		290,553,000		371,759,000
Cropland Acres	(3)	12,909,002	(3)	12,909,002	(3)	12,909,002	(4)	12,716,037	(4)	12,716,037	(4)	12,716,037
Pymt Per Acre		71.08		41.42		23.34		25.31		22.85		29.24

Source:
Indiana Agricultural Statistics Service

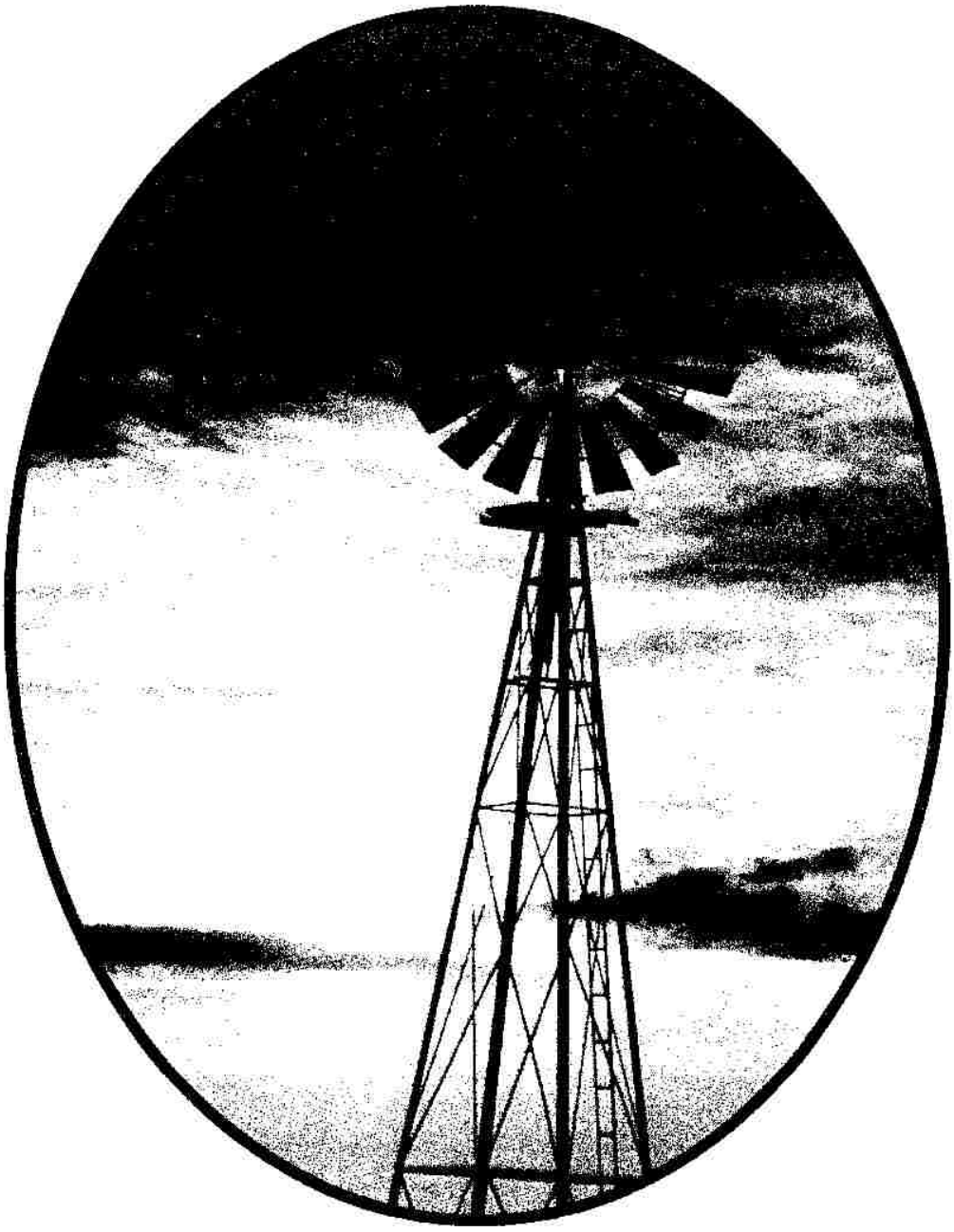
IASS - Page 8 (1)
Ag. Stats. 2009-10

IASS - Page 8 (2)
Ag. Stats. 2010-11

IASS - Page 101 (3)
Ag. Stats. 2007-08

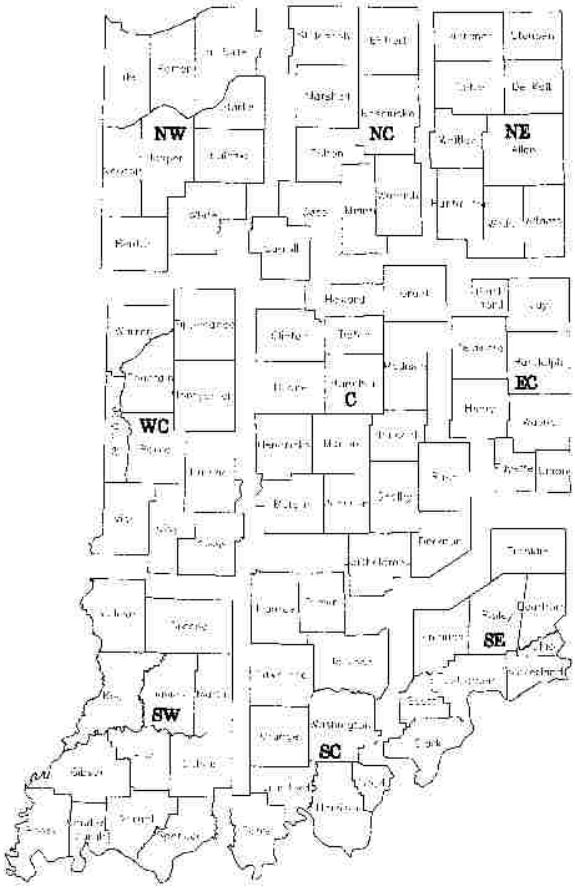
IASS - Page 97 (4)
Ag. Stats. 2010-11

INDIANA



AGRICULTURAL STATISTICS 2007-2008

COUNTY HIGHLIGHTS



COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 11,000 farm operators following the 2007 harvest season. In addition to these data are selected items of interest from the 2000 U.S. Population Census, 2002 Census of Agriculture, and 2006 Cash Receipts information from the Bureau of Economics Analysis. The County Highlights section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay is represented by three dashes because this category is not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 2002 Chicken data from Census includes only layers twenty weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2000 Census Population	6,080,485
2002 Total Land Area (acres)	22,945,817
2002 Number of Farms	60,296
2002 Land in Farms (acres)	15,058,670
2002 Average Size of Farm (acres)	250
2002 Value of Land & Bldgs (avg/acre)	$2,567
2002 Cropland (acres)	12,909,002
2002 Harvested Cropland (acres)	11,937,370
2002 Pastureland, all types (acres)	1,098,301
2002 Woodland (acres)	1,153,779

2007 CROPS	PLTD	HARV	YLD	UNIT	PROD
Corn	6,500,000	6,370,000	155	Bu	987,350,000
Soybeans	4,700,000	4,680,000	45	Bu	210,600,000
Wheat	420,000	370,000	57	Bu	21,090,000
Hay	---	660,000	2.34	Ton	1,544,000
2002 Popcorn	---	69,207	---	Lbs	219,836,706

2006 Cash Receipts	$6,040,112,000
Crop Receipts	$3,787,303,000
Livestock Receipts	$2,252,809,000
2006 Other Income	$765,206,000
Government Payments	$541,141,000
Imputed Income/Rent Received	$224,065,000
2006 Total Income	$6,805,318,000
Less: Production Expenses	$6,222,612,000
Realized Net Income	$582,706,000

LIVESTOCK	NUMBER HEAD
Jan 2008 All Cattle	890,000
Beef Cows	234,000
Milk Cows	166,000
2002 All Hogs	3,478,570
2002 All Sheep	61,620
2002 Chickens	21,952,110
2002 Turkeys	3,848,054

INDIANA AGRICULTURAL STATISTICS

2009-2010

FARM INCOME

FARM INCOME INDICATORS, INDIANA, 2005-2009

Item	2005	2006	2007	2008	2009
			Thousand Dollars		
Gross Farm Income	7,288,300	7,292,900	9,101,200	11,422,400	**10,844,500**
Gross Cash Income	6,508,000	6,789,300	8,648,900	10,290,300	**9,704,200**
Noncash Income	648,800	639,100	713,200	733,200	**738,500**
Value of Inventory Adjustment	131,500	(135,500)	(260,900)	398,900	**401,800**
Total Production Expenses	5,753,900	5,947,900	7,348,500	8,219,300	**8,304,500**
Purchased Inputs	3,259,000	3,415,800	4,694,300	5,383,500	**5,518,400**
Interest	409,400	470,700	498,000	507,000	**500,000**
Contract and Hired Labor Expenses	288,800	309,100	385,700	360,200	**357,600**
Net Rent to Nonoperator Landlords	663,300	548,400	498,200	611,000	**544,600**
Capital Consumption	846,100	890,100	911,800	973,100	**1,024,300**
Property Taxes	270,000	300,000	360,000	380,000	**350,000**
NET FARM INCOME	1,534,400	1,345,000	1,752,700	3,203,000	**2,540,000**
Gross Receipts of Farms	6,649,100	6,661,600	8,401,800	10,730,200	**10,135,700**
Farm Production Expenditures	5,451,200	5,620,300	6,995,900	7,814,900	**7,911,300**
RETURNS TO OPERATORS	1,197,800	1,041,400	1,405,900	2,915,300	**2,224,400**
Gross Cash Income	6,508,000	6,789,300	8,648,900	10,290,300	**9,704,200**
Cash Expenses	4,843,900	4,997,500	6,359,300	7,111,400	**7,182,600**
NET CASH INCOME	1,664,100	1,791,800	2,289,600	3,179,000	**2,521,600**

Source: Economic Research Service

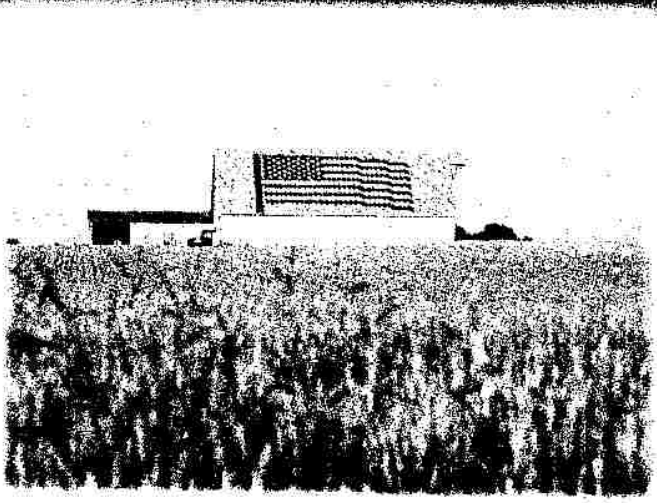
U.S. GOVERNMENT PAYMENTS BY PROGRAM, INDIANA, 2005-2009 1/

Program	2005	2006	2007	2008	2009
			Thousand Dollars		
Production Flexibility Contracts	(60)	(2)	(1)	---	---
Direct Payments 2/	233,833	228,189	228,025	228,443	**213,253**
Counter-cyclical Program Payments	192,992	185,161	67	21	**5**
Loan Deficiency Payments	336,963	44,099	252	295	**11**
Marketing Loan Gains	17,745	7,617	---	---	---
Commodity Certificate Exchange Gains	8,444	61	5	---	---
Milk Income Loss Payments 3/	277	6,538	1,200	4	**13,784**
Tobacco Transition Payments 4/	20,739	10,980	8,272	7,296	**7,523**
Conservation 5/	67,999	58,253	63,006	64,422	**61,745**
Supplemental Funding 6/	39,014	460	1,722	21,478	**9,091**
Miscellaneous 7/	(44)	(71)	(44)	(56)	**(38)**
Total	917,903	541,285	302,505	321,903	**305,371**

1/ Amounts include only cash payments made directly to farmers.
2/ Direct Payments are authorized by the Farm Security and Rural Investment Act of 2002 for 2002 through 2007 crops. Direct Payments for the 2002 crops are reduced by the amount of fiscal year 2002 payment received under Production Flexibility Contracts. The Act also increases the number of crops authorized to receive Direct Payments.
3/ Program authorized by the Farm Security and Rural Investment Act of 2002.
4/ Payment includes both the CCC payments to quota holders and producers and the third party payments to quota holders and producers who opted for the lump sum payment option.
5/ Includes amount paid under Conservation Reserve, Agriculture Conservation, Emergency Conservation, and Great Plains Program.
6/ Ad Hoc and emergency programs provided by the Agricultural Risk Protection Act of 2000, Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act 2001 and Agricultural Economic Assistance Act 2001. Some of these programs include; Crop Disaster Program, Dairy Disaster Assistance Program, Livestock Emergency Assistance program, Quality Losses Program, and Tobacco Disaster Assistance Program
7/ Miscellaneous Programs include; Forestry Incentive Annual, Dairy Indemnity, Interest Payments, Disaster Program Payments, Payment Limitation Refund, Noninsured Assistance, Disaster Reserve, and Environment Quality Incentives.

Source: Economic Research Service

INDIANA AGRICULTURAL STATISTICS



2010-2011

60

FARM INCOME

FARM INCOME INDICATORS, INDIANA, 2006-2010

Item	2006	2007	2008	2009	2010
			Thousand Dollars		
Gross Farm Income	7,292,900	9,100,500	11,378,300	10,712,000	10,868,600
Gross Cash Income	6,789,300	8,648,200	10,246,300	9,876,800	10,296,300
Noncash Income	639,100	713,200	733,100	739,700	763,400
Value of Inventory Adjustment	(135,500)	(260,900)	398,900	95,500	(191,100)
Total Production Expenses	5,947,900	7,348,200	8,207,600	8,319,400	8,481,400
Purchased Inputs	3,415,800	4,693,900	5,371,400	5,500,900	5,510,900
Interest	470,700	498,000	507,000	500,000	479,000
Contract and Hired Labor Expenses	309,100	385,700	360,200	374,500	387,700
Net Rent to Nonoperator Landlords	548,400	498,200	611,300	561,800	700,300
Capital Consumption	890,100	911,800	973,100	1,023,400	1,045,600
Property Taxes	300,000	360,000	380,000	350,000	350,000
NET FARM INCOME	1,345,000	1,752,400	3,170,700	2,392,500	2,387,200
Gross Receipts of Farms	6,661,600	8,401,100	10,686,200	10,003,200	10,139,300
Farm Production Expenditures	5,620,200	6,990,100	7,800,900	7,918,000	8,082,300
RETURNS TO OPERATORS	1,041,400	1,411,000	2,885,300	2,085,200	2,057,000
Gross Cash Income	6,789,300	8,648,200	10,246,300	9,876,800	10,296,300
Cash Expenses	4,997,500	6,353,600	7,097,300	7,188,900	7,339,400
NET CASH INCOME	1,791,800	2,294,600	3,149,000	2,688,000	2,956,900

Source: Economic Research Service

U.S. GOVERNMENT PAYMENTS BY PROGRAM, INDIANA, 2006-2010 1/

Program	2006	2007	2008	2009	2010
			Thousand Dollars		
Production Flexibility Contracts	(2)	(1)	---	---	---
Direct Payments 2/	228,189	228,025	228,437	213,253	214,055
Average Crop Revenue Election (ACRE payment)	---	---	---	---	3,104
Counter-cyclical Program Payments	185,161	67	21	5	3
Loan Deficiency Payments	44,099	252	295	11	14
Marketing Loan Gains	7,617	---	---	---	---
Commodity Certificate Exchange Gains	61	5	---	---	---
Milk Income Loss Payments 3/	6,538	1,200	4	13,784	781
Tobacco Transition Payments 4/	10,980	8,272	7,296	6,641	5,454
Conservation 5/	58,253	63,006	64,411	61,739	69,929
Supplemental Funding 6/	460	1,722	21,478	8,943	79,193
Miscellaneous 7/	(71)	(44)	(56)	(38)	8
Total	541,285	302,505	321,887	304,337	372,540

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Source: Economic Research Service

COUNTY HIGHLIGHTS

COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 15,000 farm operators following the 2010 harvest season. In addition to these data are selected items of interest from the U.S. Population Census, 2007 Census of Agriculture, and 2009 Cash Receipts information from the Bureau of Economics Analysis. The County Highlights section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay is represented by three dashes because this category is not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 2007 Chicken data from Census includes only layers twenty weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2007 Census Population	6,335,862
2007 Total Land Area (acres)	22,924,685
2007 Number of Farms	60,938
2007 Land in Farms (acres)	14,773,184
2007 Average Size of Farm (acres)	242
2007 Value of Land & Bldgs (avg/acre)	$3,583
2007 Cropland (acres)	12,716,037
2007 Harvested Cropland (acres)	12,108,940
2007 Pastureland, all types (acres)	986,522
2007 Woodland (acres)	1,020,287

2009 Cash Receipts	$9,138,699,000
Crop Receipts	$6,457,588,000
Livestock Receipts	$2,681,111,000
2009 Other Income	$947,511,000
Government Payments	$305,375,000
Imputed Income/Rent Received	$642,136,000
2009 Total Income	$10,086,210,000
Less: Production Expenses	$8,229,622,000
Realized Net Income	$1,856,588,000

2010 CROPS	PLTD	HARV	YLD	UNIT	PROD
Corn	5,900,000	5,720,000	157.0	Bu	898,040,000
Soybeans	5,350,000	5,330,000	48.5	Bu	258,505,000
Wheat	250,000	230,000	60.0	Bu	13,800,000
Alfalfa Hay	---	300,000	3.60	Ton	1,080,000
Other Hay	---	370,000	2.20	Ton	814,000
2007 Popcorn	---	55,768	---	Lbs	220,971,578

LIVESTOCK	NUMBER HEAD
Jan 2011 All Cattle	850,000
Beef Cows	213,000
Milk Cows	172,000
2007 All Hogs	3,669,057
2007 All Sheep	49,021
2007 Chickens	24,238,513
2007 Turkeys	5,971,548

AN OVERVIEW OF HOW THE CALENDAR IS USED IN CALCULATING THE AG LAND BASE RATE

SPRING, 2010	SUMMER, 2010	FALL, 2010	WINTER, 2010	SPRING, 2011	SUMMER, 2011
Planting 2010 crops Sell a portion of his 2009 crops Paying 3/1/09 Property Taxes Collect portion of 2010 Cash Rent	Care for 2010 crops Sell remainder of his 2009 crops	Harvest 2010 crops Sell a portion of his 2010 crops Paying 3/1/09 Property Taxes Collect remainder of 2010 Cash Rent	Prep equipment for storage Sell a portion of his 2010 crops	Planting 2011 crops Sell a portion of his 2010 crops Paying 3/1/10 Property Taxes Collect portion of 2011 Cash Rent	Care for 2011 crops Sell remainder of his 2010 crops

CASH RENT INCOME - CALENDAR YEAR

OPER. INCOME - 1/3 NOVEMBER GRAIN PRICES

OPERATING INCOME - 1/3 MARKET YEAR AVERAGE OF GRAIN PRICES

OPERATING INCOME - 1/3 CALENDAR YEAR AVERAGE OF GRAIN PRICES